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HANDBOOK  
OF  
AUSTRALIAN FUNGI.



# HANDBOOK

OF

# AUSTRALIAN FUNGI

BY

M. C. COOKE, M.A., LL.D., A.L.S.

*Author of "Illustrations of British Fungi;" "Handbook of British Fungi;"  
"Mycographia;" "Fungi, their nature, uses, &c.;" "Myxomycetes of  
Great Britain;" "Synopsis Pyrenomycetum;" &c.*

WITH THIRTY-SIX PLATES

PUBLISHED UNDER THE AUTHORITY OF THE SEVERAL GOVERNMENTS OF THE  
AUSTRALIAN COLONIES

1892

LONDON: WILLIAMS AND NORGATE  
OR THE DEPARTMENTS OF AGRICULTURE IN MELBOURNE,  
BRISBANE, SYDNEY, ADELAIDE, HOBARTON.

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## PREFACE.

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THIS volume has been produced in order to supply a want which has long been felt in the Australian Colonies, but which hitherto has been found to be impracticable, as local publishers would not undertake the risk. Fortunately this difficulty has been removed by the combined action of the Governments of the most important colonies to assist in this publication. It is now issued under the sanction and authority of the Governments of Victoria, New South Wales, Queensland, South Australia, and Tasmania. It has not been attempted to incorporate New Zealand, and only to refer to most of the species which are common to Australia and New Zealand, the majority being different.

The material upon which this work is based consists of the species enumerated by Kalchbrenner in "Grevillea," and previous authors, with those collected since and communicated to the author by Messrs. F. M. Bailey, Dr. Berggren, Mrs. Flora Martin, Baron F. von Mueller, F. Reader, Schomburgk, and others. In addition to these may be mentioned the specimens secured by Sir Joseph D. Hooker, in his Antarctic Voyage, in the *Challenger* Expedition, and other Expeditions which have touched upon the coasts.

It is not supposed that the present work is by any means exhaustive of the Fungi of the Australian Colonies, since those which are so minute as to require the aid of a pocket lens are far below the number which would be reasonably expected to occur

over such a large expanse of country. Such specimens are unob- served by the ordinary botanical collector, and require some ex- perience to detect. Thanks are, therefore, due to the perseverance of Mr. F. M. Bailey, Mrs. Martin, and Baron F. von Mueller, in continuing to secure and forward specimens to England for identification, since, without their co-operation, this volume could scarcely have been produced. My thanks are also due to Mr. George Massée for his constant assistance in the exami- nation and determination of the material which forms the basis of this work. Except the *Hymenomycetes*, all the specimens enumerated and described by Kalchbrenner were referred to myself at the time, and we shared the responsibility.

Unfortunately, in some cases, the localities attached to the specimens which have passed through my hands are not indi- cated, as also is the case with some published descriptions of species which I have never seen, so that I have had to rest content with the general indication of "Australia," instead of the usual quotation of each colony. Interested persons will possibly take exception to the omission of the names of collectors under each individual species, but as this could not be done for lack of the necessary information in all cases, it was con- sidered advisable not to attempt it in any. Moreover, this could hardly be classed as "scientific information," and would in no way have contributed to the practical value of the volume.

The difficulties in the way of determination or description from dried specimens, especially of *Agaricini*, badly preserved with no information, and destitute of figures, are almost insur- mountable. Errors are almost inevitable in such cases, and there is never so much certainty or satisfaction as when the specimens can be seen living, or in a fresh state. The best substitute for the latter condition lies in faithful coloured drawings and accurate sections, with the addition of such notes as could not be indicated in the figures. This has been the great desideratum with Australian *Agaricini* and *Boleti*. Rarely have the specimens been carefully dried, and much more rarely have they been accompanied by any notes or figures. Excep- tions must be made in favour of some drawings by Miss Wehl Mrs. Martin, Mr. Tisdall, and some rough sketches by Mr.



Bailey, although often for lack of sections these have not been all that could have been desired. As must be expected, a great number of badly dried Agarics, without a scrap of information, have been at once condemned as useless.

In the preparation of this volume my thanks are due to Mr. W. Phillips, of Shrewsbury, for his valuable assistance with the Discomycetes, and also to Mr. G. Massee for his aid and counsel with the Gastromycetes and Myxomycetes; and also to Mrs. Flora Martin for her unflagging energy in smoothing the way for the accomplishment of this long-cherished design, now brought to a close.

It has been my endeavour, with the illustrations, to represent each genus, and the principal subgenera, as much as possible by Australian examples. As for the classification and arrangement, I accept the responsibility, and, if need be, shall be prepared to defend it. I can only hope that the publication of this "Handbook" may prove a boon to the Colonies, and justify their Governments in having given to it their liberal countenance and support.

M. C. COOKE.

London, 1892.

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# HANDBOOK

OF

## AUSTRALIAN FUNGI.

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### INTRODUCTION.

THE immense tract of country presumed to be covered by this work is the whole Australian continent, as far as it has been investigated, and the Island of Tasmania, but exclusive of New Zealand. The fungi of some of the Colonies are better known than others, but even in the best much still remains to be done, since it is believed that researches have been local, and hence incomplete. It is only during the past ten or fifteen years that any earnest endeavour has been made to collect material for a work of this kind.

The first contributions to the Fungi of Australia may be attributed to Flinders' voyage in 1801 to 1805, when Robert Brown enumerated about a dozen species. Succeeding to this were the collections of Cunningham from 1816 to 1831, and Gunn in Tasmania from 1832 to 1850. These were mostly described by the Rev. M. J. Berkeley, in connection with those collected by Drummond in 1839. Meanwhile, in Western Australia, Ludwig Preiss collected the forty species enumerated by Fries in "*Plantæ Preissianæ*," and published in 1846. From this time forward Berkeley, in Hooker's "*Flora Tasmanica*" (1860) and in Hooker's Journal for 1848, continued Tasmanian Fungi, and in the same Journal for 1845 the species collected by Drummond. Then came a period of rest, until, in 1873 and 1881, Berkeley issued papers on this subject in the "*Journal of the Linnean Society*." In 1878 Berkeley and Broome published their first communication on the Fungi of Queensland in the "*Transactions of the Linnean Society*," the second and third papers appearing in 1883 and 1887. Meanwhile the *Challenger* Expedition touched on the coasts, and collected the species recorded in the "*Linnean Journal*" for 1878. It was in 1880 that the Rev. C. Kalchbrenner commenced his series of Australian Fungi in "*Grevillea*," and in the next year these were continued, in unison with M. C. Cooke. A collected list

now being deemed to be advisable Baron F. von Mueller kindly provided for the publication of "*Fungi Australiani*," in connection with his "*Phytographiæ Australiæ*," and this was issued in 1883, but the bulk of the copies were lost at sea. This catalogue included 1,200 species. From that time to the present a continued stream of specimens have been sent over for determination, the new species being described in "*Grevillea*;" some few smaller collections having found their way to the Continent of Europe, and been recorded in "*Hedwigia*," "*Malpighia*," and other continental journals, the whole of which, we believe, are incorporated in the present volume. The number of species collected by the U.S. Exploring Expedition, one or two of the French Scientific Expeditions, or found scattered through scientific literature, during the past half century, has been small, and of little importance, but it is hoped that none of them have been overlooked. By comparison it will be seen that the number of species has been nearly doubled in less than ten years. All the specimens described by Kalchbrenner, except the *Hymenomyces*, passed through the hands of the author of this Handbook, and he has had access to all the species published by Berkeley, and by Berkeley and Broome, as well as those published by himself. The only difficulty has been with the species published on the Continent, of which he has seen some, but of the plants included in "*Plantæ Preissianæ*" he has no knowledge, and these are inserted on the authority of Fries.

Numerically the total of species for such a large tract of country as Australia is very small, and, as yet, the orders are disproportionate. Hitherto, for the most part, the large and conspicuous species have been collected, whilst the minute, for which knowledge and experience are required, are very imperfectly represented. Taking the whole number of described species of fungi, as represented in Saccardo's "*Sylloge*," at 36,000, including the first portion of the supplement, then the total for the Australian Colonies, of a little over 2,000, is but one-eighteenth of the whole. Whereas, in the British Isles, the Agaricini reach to 1,350, and, doubtless, the residue of the *Hymenomyces* would bring the number to 2,000, or equal to all the orders in Australia. It is quite improbable that a total of the *Hymenomyces* of 1,174 species represents fully the number which are indigenous, and yet the *Hymenomyces* and the *Gastromyces* are the most numerous. Accepting 9,600 as a fair computation of the number of described species of *Hymenomyces*, then a little more than one-eighth for the colonies is not an unsatisfactory proportion, when it is taken into account how short a time has been devoted to their investigation. The *Gastromyces* present several features of great interest, since it is probable that, when more complete, this portion of the Flora will be exceptionally remarkable. The total number of described species for the whole world is about

650, but in this present work 173 species are enumerated, or more than one-fourth of the whole, for the Colonies; whilst in the British Islands only 75 are included in Masee's "Monograph," which is only less than one-eighth of the total described species. From this we conclude that *Gastromycetes* are unusually strong in Australia, certainly including some interesting genera, not hitherto discovered elsewhere, but weak in subterranean species.

Accepting 3,500 as the total of known *Discomycetes*, the Australian catalogue of 133 species is essentially small, being only one twenty-sixth of the whole, whereas in Great Britain the number is not less than six hundred, and perhaps more, or about one-sixth of the whole. This is accounted for, as in the remaining orders, by the preponderance of minute species, hardly distinguishable by the naked eye. In the *Pyrenomycetes* the dearth of species is no less remarkable, for, out of a total of no less than 7,500, not more than 200, or one thirty-seventh part, are recorded for the Australian Colonies, but not less than 900 are found in the British Isles, or at least one-eighth of the total number of recorded species. With the remaining orders it is unnecessary to institute comparisons, as they are also minute species, and the catalogue for the Colonies is very rudimentary and imperfect. It may be taken for granted that of the species which require the use of a pocket lens for their detection, a large field for discovery still lies open, and it is in this direction that the most numerous additions to the "Hand-book" might be made. It is quite probable that, in the course of a few years, by working up the minute species, the total number contained in this volume would be more than doubled, even without the investigation of unexplored districts.

Curious facts in geographical distribution are constantly presenting themselves to those who have any extensive experience in the plants, especially the fungi, of distant regions. It is of common knowledge that such species as *Schizophyllum commune*, *Fomes lucidus*, *Polystictus occidentalis*, *Polystictus sanguineus*, *Stereum lobatum*, and some others, are to be met with in all countries, from warm temperate to the equator, but there are many species which are not by any means so common, or widely distributed, which occur only in countries far apart, and with broad expanses of ocean between them. There is no better illustration of this than the occurrence of Ceylon species of fungi in Australia. This is not confined to one or two species, but is manifest in several species, of which we will proceed to instance a few. There are *Agaricus (Lepiota) dolichaulos*, B. & Br., *Agaricus (Lepiota) leontoderes*, B. & Br., *Agaricus (Lepiota) aspratus*, B., *Agaricus (Lepiota) lepidophorus*, B. & Br., *Agaricus (Lepiota) rhyparophorus*, B. & Br., all Ceylon species of *Lepiota*, which occur also in some parts of Australia. In scarcely any other subgenus of *Agaricus* are so many Ceylon species found outside the limits of the island. What are the special con-

ditions which conduce to the appearance of the above species of *Lepiota*, indigenous to Ceylon, in Australia?

Undoubtedly the climate of Australia is favourable to the growth of *Boletus* and *Strobilomyces*, but, up to the present, the only Ceylon species found in Australia is the gigantic *Boletus portentosus*, B. & Br. But Ceylon is not productive for *Boleti*, and, as far as we remember, this is the only indigenous species, and that solitary one has appeared in Queensland, quite fourteen inches in diameter of the pileus.

Amongst the *Polyporei* there is no more marked instance than the occurrence of *Polystictus Peradenia*, B. & Br., which, as its name indicates, was first found in Ceylon, but has since been collected in most of the Australian colonies. Whatever errors of determination there might be with fleshy putrescent fungi, there is no room for doubt in this species, which is remarkable for its distinctive character.

*Irpex flavus*, Kl., and *Irpex zonatus*, B., are not original Cinghalese species, but they are also Australasian, as well as somewhat common in Ceylon. *Kneiffia Muelleri*, B., first found in Australia, was afterwards detected in Ceylon, and we have no record of it elsewhere. *Hymenochate strigosa*, B. & Br., was first described from Ceylon, and afterwards recognized in Australia. *Hymenochate rhabbarbarina*, B. & Br., also a Ceylon species, has been found in New Zealand. *Corticium simulans*, B. & Br., in addition to Ceylon and the United States, has been collected in Australia. *Stereum pusillum*, B., has only been recorded from Ceylon and Tasmania. Also *Stereum sparsum*, B., only for Ceylon and Australia. *Coniophora murina*, Mass., was described from Ceylon, but has since been detected in Australia. *Ascœ Zeylanica*, Berk., is recorded for Ceylon and New Zealand. *Lycoperdon lilacinum*, M. & B., although found in other localities, including South Africa and South America, is common also to Ceylon and Australia. *Epichlœ cinerea*, Berk., first received from Ceylon, has recently been collected in Australia. *Xylaria Schweinitzii*, B. & C., was first discovered in Surinam, it was found afterwards in Ceylon, and more recently in two or three localities in Australia. This is not by any means an exhaustive list, but suggestive of the relationship between some of the larger fungi in two remote countries.

Comparing the Australian Fungi with those of Europe, we find that 271 species of *Agaricini*, or altogether 472 species of *Hymenomyces* which are found in Europe extend to Australia, which would seem to indicate that two-fifths of Australian *Hymenomyces* are European, but, probably, further investigation will prove this to be too large a proportion, since examination on the spot, and in a fresh condition, may determine some of the species now referred to European types to be distinct, since it is always difficult to be quite certain with only a dried specimen or two of an Agaric, without any figure or details. With the *Gasteromyces* it is different, for, of the total of 173

Australian species, only 31 are European, and these are mostly widely-diffused species. Of the total of Australian species of the *Hymenomycetes*, now fixed at 1,174, we only recognize about 332 as exclusively Australian, which, with the 472 European species, make 804 accounted for, leaving 370 species as common to Australia, and some other country, exclusive of Europe, some being found in New Zealand, Ceylon, Cuba, the United States, and South America.

The classification adopted by Fries, in his "Systema Mycologicum," published in 1822, and amplified in his "Summa Vegetabilia" of 1846, was still imperfect and unsatisfactory, inasmuch as it ignored all microscopical characters, and no complete system was offered in its place until Professor Saccardo commenced his "Sylloge" in 1882. It is, therefore, to this latter work, with some modifications, that we have resorted in the compilation of the present volume. The large order of *Hymenomycetes* are not essentially different in their arrangement from the Friesian method, although Saccardo has raised all the subgenera of *Agaricus* to the rank of genera, with which we are not prepared to coincide, and then altered their sequence so as to bring them into four groups, according to the colour of the spores. On the contrary, we have retained the genus *Agaricus* intact, with its subgenera, which is succeeded by the other genera of *Agaricini*, as in the "Hymenomycetes Europæi" of Fries, and so on to the end. In some few instances new genera are interpolated, or old ones transposed, as we think with good reason, especially in the *Tremellini*; and the large genus *Polyporus* has been divided according to the method proposed by Fries himself in his "Novæ Symbolæ." In all these instances we are in accord with Saccardo.

In the *Gasteromycetes* we have almost followed the "Sylloge," except in one or two points, such as the suppression of *Mycenastrum*, and the arrangement of *Lycoperdon*, in which latter instance we have followed Masee's "Monograph." We have never considered that the *Gasteromycetes* was the strongest group in Saccardo's "Sylloge." The subterranean species, of which there are but few, lead naturally to the *Tuberacei*, by means of which the *Ascomycetes* are entered. Then follows the *Discomycetes*, in which we were content to accept the arrangement of the "Sylloge," with some small modifications. The *Pyrenomycetes* are very meagrely represented, but such of them as there are, are classified according to the "Synopsis Pyrenomycetum" published in "Grevillea," in which the principle of the "Sylloge" is departed from, in not taking the sporidia as the fundamental basis of classification. Our opinions on this point have been expressed freely elsewhere, and need not be revived here. The *Phycomycetes* close this portion of the work.

The *Hypodermeæ*, which consists of the Ustilagines, and Uredines, follow the "Sylloge" in their arrangement, as

embodying the latest views on this subject, although we still venture to think that it is not the best, or, at any rate, that it is still in a transition state. We are old-fashioned enough to believe that for purposes of classification, features should be taken which are present and evident in the specimens themselves, and are not dependent upon any of the phenomena of their life history, which cannot be represented in the herbarium.

Imperfect Fungi are those which are either known, or assumed to be genetically related to other fungi, and therefore not autonomous. These naturally follow the more perfect groups, and hence the *Sphaeropsidaceae* and the *Hyphomycetes*, or moulds, bring the acknowledged Fungi to a close. We have written the words "acknowledged fungi" advisedly, because there are some who will not acknowledge the *Myxomycetes* as true fungi, and we do not wish to wound their susceptibilities.

The *Myxomycetes* are arranged according to the latest "Monograph," by Mr. G. Massee, and consequently are not in accordance with the "Sylloge," at least as far as the sequence of genera is concerned. That they should be classed with fungi is still our own conviction, but the peculiarities of their vegetative stage separate them from all other groups. In their reproductive stage their affinities are undoubtedly with fungi, with some resemblance to the *Gasteromycetes*, but they can no longer be intimately associated with that order, as was formerly believed.

For the benefit of those who are unacquainted with the principal features of the different groups which find a place in this volume, and to facilitate them in its use, it may be permitted here to diverge into a brief explanation. The *Basidiomycetes* include by far the largest number of Australian fungi, and their chief distinction is that the spores, which are analogous to seeds in the higher plants, are borne on the apices of certain supporting bodies termed *basidia*. In typical forms these basidia are more or less club-shaped, surmounted by four minute points, or spore-bearers, called *sterigmata*, each of which carries a spore. The basidia packed closely together side by side, and often intermixed with other sterile processes, termed *cystidia*, constitute the spore-bearing surface or *hymenium*. In the *Hymenomycetes* this hymenium is exposed, but in the *Gasteromycetes* the hymenium is enclosed in an outer covering, or peridium. The two groups known respectively as the *Hymenomycetes* and the *Gasteromycetes* constitute together the *Basidiomycetes*. In the *Hymenomycetes* the hymenium is disposed in various ways. For instance, in the *Agaricini*, to which the mushroom belongs, the hymenium is inferior, or on the under surface of the cap or pileus, and forms a delicate membrane, which is folded in pleats or folds, like a fan, radiating from the stem to the edge of the pileus. These folds,



or gills, vary in the different genera, being persistent in such as *Agaricus*, *Russula*, *Lentinus*, etc., but deliquescent in *Coprinus*, *Bolbitius*, etc. The edge of the folds is acute in *Agaricus*, *Marasmius*, etc., but obtuse and vein-like in *Cantharellus*, longitudinally channelled in *Trogia*, and splitting in *Schizophyllum*. In order to assist in their determination, we have appended, in a tabular form, the following

# KEY TO THE GENERA, AND SUBGENERA, OF AGARICINI.

## I. Spores white, or very slightly tinted.—*Leucospori*.

- \* Plant fleshy, more or less firm, putrescent (neither deliquescent nor coriaceous).
  - † Hymenophore free.
    - Pileus bearing warts or patches free from the cuticle.
      - Ring present . . . . . 1. *Amanita*.
      - Ring absent . . . . . 2. *Amanitopsis*.
    - Pileus scaly, scales concrete with the cuticle.
      - Ring present . . . . . 3. *Lepiota*.
      - Ring absent . . . . . 4. *Schulzeria*.
  - † Hymenophore confluent.
    - ‡ Without cartilaginous bark.
      - § Stem central.
        - || With a ring . . . . . 5. *Armillaria*.
        - || Ringless.
          - Gills sinuate . . . . . 6. *Tricholoma*.
          - Gills decurrent.
            - Edge acute . . . . . 7. *Clitocybe*.
            - Edge swollen . . . . . xi. *CANTHARELLUS*.
          - Gills adnate.
            - Parasitic on other Agarics . . . . . xii. *NYCTALIS*.
            - Not parasitic.
              - Milky . . . . . ix. *LACTARIUS*.
              - Not milky.
                - Rigid and brittle . . . . . x. *RUSSULA*.
                - Waxy . . . . . vii. *HYGROPHORUS*.
          - § Stem lateral or absent . . . . . 11. *Pleurotus*.
        - ‡ With cartilaginous bark.
          - Gills adnate . . . . . 8. *Collybia*.
          - Gills sinuate . . . . . 9. *Mycena*.
          - Gills decurrent . . . . . 10. *Omphalia*.
    - \* Plant tough, coriaceous, or woody.
      - † Stem central.
        - Gills simple . . . . . xiii. *MARASMIUS*.
        - Gills branched . . . . . xvi. *XEROTUS*.
      - † Stem lateral or wanting.
        - Gills toothed . . . . . xiv. *LENTINUS*.
        - Gills not toothed . . . . . xv. *PANUS*.
        - Gills channelled longitudinally or crisped . . . . . xvii. *TROGIA*.
        - Gills splitting longitudinally . . . . . xviii. *SCHIZOPHYLLUM*.
        - Gills anastomosing . . . . . xix. *LENZITES*.
    - \* Plant membranaceous, stem central . . . . . iv. *HIATULA*.

II. Spores rosy or salmon colour.—*Hyporhodi*.

- \* Without cartilaginous bark.
  - † Hymenophore free.
    - ‡ With a volva.
      - Ring present . . . . . 12. *Metrararia*.
      - Ring absent . . . . . 13. *Volvaria*.
    - ‡ Without a volva.
      - With a ring . . . . . 14. *Annularia*.
      - Ringless . . . . . 15. *Pluteus*.
  - † Hymenophore confluent.
    - ‡ Stem central.
      - Gills adnate or sinuate . . . . . 16. *Entoloma*.
      - Gills decurrent . . . . . 17. *Clitopilus*.
    - ‡ Stem lateral or absent . . . . . 21. *Claudopus*.
- \* With cartilaginous bark.
  - Gills decurrent . . . . . 20. *Eccilia*.
  - Gills not decurrent.
    - Pileus torn into scales . . . . . 18. *Leptonia*.
    - Pileus papillose, subcampanulate.
      - Gills membranaceous, persistent. 19. *Nolanea*.
      - Gills subdeliquescent . . . . . iii. *BOLBITIUS*.

III. Spores brown, sometimes reddish or yellowish brown.—*Dermini*.

- \* Without cartilaginous bark.
  - † Stem central.
    - ‡ With a ring.
      - Ring continuous . . . . . 23. *Pholiota*.
      - Ring arachnoid, filamentous or evanescent.
        - Gills adnate, terrestrial . . . v. *CORTINARIUS*.
        - Gills decurrent, or acutely adnate, mostly epiphytal . . . 26. *Flammula*.
    - ‡ Without a ring.
      - With rudimentary volva . . . 22. *Locellinia*.
      - Without a volva.
        - Gills adhering to the hymenophore, and sinuate.
          - Cuticle fibrillose or silky . . . 24. *Inocybe*.
          - Cuticle smooth, viscid. . . . 25. *Hebeloma*.
        - Gills separating from the hymenophore, and decurrent . . . vi. *PAXILLUS*.
    - † Stem lateral or absent . . . . . 30. *Crepidotus*.
  - \* With cartilaginous bark.
    - Gills decurrent . . . . . 29. *Tubaria*.
    - Gills not decurrent.
      - Margin of pileus at first incurved . . . 27. *Naucoria*.
      - Margin of pileus always straight.
        - Hymenophore free . . . . . *Pluteolus*.
        - Hymenophore confluent . . . . 28. *Galera*.

IV. Spores purple, sometimes brownish purple, dark purple, or dark brown.—*Pratellæ*.

- \* Without cartilaginous bark.
  - † Hymenophore free.
    - Ring present.
      - ‡ With a volva. . . . . 31. *Chitonina*.
      - ‡ Without a volva . . . . . 32. *Psalliota*.
    - Ring absent . . . . . 33. *Pilosace*.

## † Hymenophore confluent.

Veil normally ring-shaped on the stem . . . . . 34. *Stropharia*.

Veil normally adhering to the margin of pileus . . . . . 35. *Hypholoma*.

## \* With cartilaginous bark.

Gills decurrent . . . . . 37. *Deconia*.

Gills not decurrent.

Margin of pileus at first incurved. 36. *Psilocybe*.

Margin of pileus at first straight 38. *Psathyra*.

V. Spores black, or nearly so.—*Coprinarii*.

Gills deliquescent . . . . . ii. *COPRINUS*.

Gills not deliquescent.

Gills decurrent . . . . . viii. *GOMPHIDIUS*.

Gills not decurrent.

Pileus striate . . . . . 40. *Psathyrella*.

Pileus not striate . . . . . 39. *Panaeolus*.

In the foregoing table the names of the genera are printed in small capitals, and those of the subgenera in italics.

From the *Agaricini* we pass to the *Polyporei*, in which, whilst the hymenium is still inferior, it is no longer spread over a folded membrane, but lines the interior of pores, which are parallel to each other, and at right angles to the plane of the pileus. There are but few genera, and these sufficiently distinct to require no elaborate description. The only genera in which the whole substance is fleshy are *Boletus* and its immediate allies, *Strobilomyces* and *Fistulina*, at least in so far as the Australian Flora is concerned. Between *Boletus* and *Strobilomyces* there is very little difference, save that in the latter the pileus is broken up into large scales, whereas in the former the pileus is even. *Fistulina* differs from both these in the pores being the perforations of distinct separable tubes, and not closely adnate and confluent tubes, as in *Boletus*, *Strobilomyces*, and *Polyporus*. The residue of the genera, the substance, even when it is rather soft and fleshy at the first, soon becomes firm and hard, often leathery or woody. The old genus long known as *Polyporus* has been broken up into four genera, in all of which the hymenium is similar, the difference being that in *Polyporus*, as now limited, the pileus is at first fleshy, but tough, becoming hardened, rarely fragile, without furrows or zones on the pileus, and with only a single stratum of pores. In *Fomes* the pileus is woody, with a hard crust, concentrically sulcate, and, being perennial, usually with more than one stratum of pores, each stratum being the growth of a single year. In *Polystictus* the pileus is more or less leathery, with a zoned, usually somewhat hairy or velvety surface, a fibrillose internal stratum, and only one series of pores. In the fourth genus, or *Poria*, there is no true pileus, the whole fungus being spread upon, and adnate to the matrix, so that it appears as a stratum of pores seated upon a kind of subiculum. *Trametes* differs from *Polyporus* and its

allies in the dissepiments of the pores being thick and rounded, and the pores being continuous with the substance of the pileus and similar to it. *Sclerodepsis* resembles *Trametes* in some things, but differs in the pileus being scutate at the base, and the edges of the pores acute, and sometimes toothed. In *Dædalea* the pores are sinuous and very irregular. *Hexagonia* resembles *Polystictus*, with large hexagonal pores. These are angular and radiating in *Favolus*, but rather rhomboidal than hexagonal. The substance is gelatinous in *Laschia* and *Campbellia*, but more waxy in *Merulius*. The pores are formed by veins in *Laschia* and in some species of *Merulius*, but they are deep and sometimes toothed in *Campbellia*, which seems to be stipitate, whereas the species of *Merulius* are sessile. *Porothelium* unites the Polyporei with the Hydnei, since the pores are distant, and are practically perforated papillæ. *Solenia* consists, in our opinion, of elongated cups, similar to *Cyphella*, to which it is really more closely allied than to the Polyporei.

The *Hydnei* are distinguished by the hymenium covering the outside of spines, warts, or papillæ. In *Hydnum* the processes are spines or teeth, as they are in *Tremellodon*, but in the latter the substance and structure approaches *Tremella*. In *Sistotrema* the processes are flattened teeth, as they are in *Irpex*, but in the latter connected at the base. *Radulum* has an irregularly tuberculose hymenium, and *Phlebia* is somewhat gelatinous, when living, with a corrugated hymenium. *Grandinia*, *Odontia* and *Kneiffia* are closely related, but in the first the hymenium is warted or granulose, with the warts obtuse; in *Odontia* the warts are crested, and in *Kneiffia* there are no warts, but the hymenium is rough with rigid setæ.

In *Thelephorei* the hymenium is even, or nearly so, being at the most only velvety. *Craterellus* has a waxy hymenium. *Lachnocladium* has the habit of a *Clavaria*, with a lateral hymenium; *Thelephora* a soft hymenium, on one or both surfaces, and the substance without any intermediate stratum, the spores commonly globose, or nearly so, and often rough. *Cladoderris* resembles *Stereum* rather than *Thelephora*, with a leathery pileus and a veined hymenium. *Stereum* is also leathery, with an intermediate fibrillose stratum, and an even, smooth hymenium. In texture and general appearance *Hymenochaete* resembles *Stereum*, but the hymenium is velvety with minute rigid setæ. *Peniophora* is also velvety, with warted, colourless setæ, or processes resembling cystidia, the texture and habit resembling *Corticium*. The little genus *Aleurodiscus* also resembles *Corticium*, but the form approaches *Cyphella* in being cup-shaped at first. The structure of the hymenium is peculiar from the presence of large, clavate, nucleate basidia mixed with nodular paraphyses. *Corticium* is effused, with a waxy, smooth hymenium, and no intermediate stratum, and hyaline spores, whereas in *Coniophora* the spores

are profuse, powdery, and coloured. *Cyphella* resembles a cup-shaped *Corticium* or, still more, *Peziza* without asci.

The fifth family, *Clavariæ*, consists of erect, simple, or branched fungi, with the hymenium not distinct from the rest of the fungus, surrounding the whole plant. In *Sparassis* the branches are flattened into leafy laminæ, and the whole substance is fleshy. *Clavaria* is also fleshy, and either simple or branched, with tapering branches. *Calocera* resembles *Clavaria* in form, but the substance is tremelloid when fresh.

The sixth family is the *Tremellinæ*, in which the substance is, more or less, gelatinous, shrinking in drying and reviving with moisture. The genus which links it with the *Thelephoræ* is *Auricularia*, which in external appearance and habit is almost a *Stereum*, but the hymenium is vaguely ribbed and folded, swollen and tremelloid when moist, but hard and horny when dried. Similar to this in many features is *Hirneola*, but the species are cup-shaped and the substance is thinner. The hymenium is turned upwards, that is to say it is superior in *Hirneola* and inferior in *Auricularia*. More decidedly tremelloid are the four succeeding genera, of which *Exidia* is often papillose. *Ulocolla* is brain-like and folded, with the spores bilocular in germination. *Tremella* is similar in form, but the spores and sporidiola are subglobose and never divided, whilst in *Seismosarca* every part has scattered bristles, and the spores are coloured. The two remaining genera are *Dacryomyces*, in which the species are small, the mature spores are transversely divided, and the conidia produced in chains, and *Guepinia*, which somewhat resembles a *Peziza* in form, with a short stem. This group has been the subject of study with Dr. Brefeld, and the arrangement is based upon his observations. A great deal depends upon the minute structure, as shown by the microscope, and especially the character of the basidia and the germination of the spores, although we think that the less such features as the last are introduced into systematic botany the better.

Conscious that such details as the foregoing, on the characteristics of genera, are very uninteresting reading, we shall only give a brief attention to the *Gastromycetes*, which are too decided a feature in the Australian Flora to be ignored, and omit all reference to the genera of the succeeding groups. It has already been intimated that the *Gastromycetes* are characterized by having the spores produced on basidia, but for the most part enclosed until maturity within an envelope, volva, or peridium. Three families contain all the genera, and the first of these, the *Phalloideæ*, has a hymenium which becomes slimy and deliquescent. The following table will exhibit the distinctive features:—

Receptacle pileate, at first volvate.

Stem indusiate . . . . .	1. <i>Dictyophora</i> .
Stem not indusiate . . . . .	2. <i>Ithyphallus</i> .

Receptacle wholly clathrate . . . .	4. <i>Clathrus</i> .
Receptacle clathrate above . . . .	5. <i>Colus</i> .
Receptacle stipitate.	
Apex entire . . . . .	3. <i>Mutinus</i> .
Apex lobate . . . . .	6. <i>Lysurus</i> .
Apex laciniate . . . . .	7. <i>Anthurus</i> .
Apex stellate . . . . .	8. <i>Aseröe</i> .

The next family is the *Nidulariaceæ*, in which the spores are contained within compact, lenticular sporangia, which are at first enclosed in a general globose or cup-shaped receptacle.

Receptacle cup-shaped.	
Substance stratose . . . . .	9. <i>Cyathus</i> .
Substance not stratose . . . . .	10. <i>Crucibulum</i> .
Receptacle globose, then stellate. . . .	11. <i>Sphærobolus</i> .

The third and largest family is the *Lycoperdaceæ*, in which the spores are pulverulent when mature, and then dispersed by an opening or by fissure of the peridium. In some of these the peridium possesses a distinct stem; in others the stem is suppressed. In some the peridium is double; in others it is single. And, again, some possess a distinct central columella, which in others is absent. All these features are taken into account in arranging the following scheme:—

Peridium stipitate.	
With a columella.	
Gleba cellular . . . . .	12. <i>Secotium</i> .
Gleba floccose . . . . .	16. <i>Podaxis</i> .
Without columella.	
Stem fibrous, hollow.	
Peridium spherical . . . . .	19. <i>Tylostoma</i> .
Peridium lenticular . . . . .	20. <i>Battarrea</i> .
Stem solid, rooting . . . . .	28. <i>Castoreum</i> .
Stem woody . . . . .	29. <i>Xylopodium</i> .
Stem cartilaginous . . . . .	21. <i>Calostoma</i> .
Peridium sessile, or subsessile.	
With distinct columella.	
Peridium single.	
Splitting lengthwise . . . . .	13. <i>Chainoderma</i> .
Indehiscent.	
Subglobose . . . . .	15. <i>Mesophellia</i> .
Cylindrical . . . . .	18. <i>Protoglossum</i> .
Peridium double . . . . .	14. <i>Cycloderma</i> .
Peridium absent . . . . .	17. <i>Gymnoglossum</i> .
With free central nucleus . . . . .	23. <i>Diploderma</i> .
Without distinct columella.	
Peridium double.	
Exoperidium flaky.	
Endoperidium thin . . . . .	24. <i>Bovista</i> .
Endoperidium thick . . . . .	27. <i>Mycenastrum</i> .
Exoperidium spiny or warty . . . . .	25. <i>Lycoperdon</i> .
Exoperidium thick, areolate . . . . .	26. <i>Scleroderma</i> .
Exoperidium stellate . . . . .	22. <i>Geaster</i> .
Peridium single.	
Containing peridiola . . . . .	31. <i>Polysaccum</i> .
Containing sporangiola . . . . .	32. <i>Arachnion</i> .

There is a fourth family, which includes the subterranean species, or *Hymenogastraceæ*, but these, as yet, are so poorly represented that no synoptical key is necessary.

The *Ascomycetes* are a large order of Fungi which derive their name from the spores, or sporidia, being developed enclosed in globose, clavate, or cylindrical sacs of delicate membrane, termed *asci*. These *asci* are usually packed closely together side by side, so as to form the hymenium, which is either concealed within a closed receptacle, as in the *Pyrenomycetes*, or becomes exposed, as a more or less concave disc, in the *Discomycetes*. These are the two grand divisions of the *Ascomycetes*, the *Tuberaceæ* being a smaller group containing subterranean species, analogous to the subterranean species of *Gastromycetes*, but having the sporidia produced in *asci*. At present these are too incompletely represented for it to serve any useful purpose to remark upon the relations of the genera. It may, however, be well to refer here to the two groups at the latter part of the volume which are associated together under the term "Imperfect Fungi." These are the *Sphaeropsideæ* and the *Hyphomycetæ*. The former are typically so closely resembling the *Pyrenomycetes* in habit and appearance that they may be mistaken for them unless examined with the microscope, when it is found that the spores within the perithecia are *not* produced in *asci*, but at the tips of short sporophores, or spore bearers. Some of the species have been traced to an association with certain species of the *Pyrenomycetes*, as imperfect stages, or as pycnidia, or stylospores, but what is their special function is yet undetermined; some of them may prove to be autonomous, but it is doubtful if many of them can be so ennobled. As for the *Hyphomycetes*, or moulds, many of them are believed to be the conidia of *Pyrenomycetes*; such relations subsist between many of the species of *Isaria* and *Cordyceps*, between *Tubercularia* and *Nectria*, between *Oidium* and *Erysiphe*, etc. It may be found hereafter that such destructive genera as *Cercospora*, *Fusicladium*, and some others have no such relationship, but nothing can be affirmed. It is prudent, for the present, to regard them as imperfectly known, or, as we have called them, "imperfect fungi."

The *Hypodermææ* include the fungi parasitic on living plants, known as *Ustilagines*, or smuts and bunts, and the *Uredines*, or rusts and brands. What we have to explain of the former may be put in a tabular form.

## USTILAGINÆÆ.

Spores simple, soon free.

At first botryoid.

Spores smooth or warted . . . . 1. *Ustilago*.

Spores mostly areolate . . . . 2. *Tilletia*.

Always solitary.

With columella . . . . . 4. *Sphacelotheca*.

Without columella.

Sori pustular, pale . . . . .	3.	<i>Entyloma</i> .
Spores agglomerated.		
Enclosed in a common tegument . . . . .	5.	<i>Doassania</i> .
Adherent without tegument.		
All fertile . . . . .	6.	<i>Thecaphora</i> .
Peripheral sterile . . . . .	8.	<i>Urocystis</i> .
Soon becoming free . . . . .	7.	<i>Sorosporium</i> .
Spores seated on a definite stroma . . . . .	10.	<i>Cerebella</i> .
Spores enclosed in a peridium . . . . .	9.	<i>Graphiola</i> .

A similar course may also be adopted with the Uredines, bearing in mind that in this group the spores are not virtually all unicellular, as in the foregoing. No account need be taken here of the complications of development.

## UREDINEÆ.

Teliospores continuous, one-celled . . . . .		AMEROSPORÆ.
Sori horizontal.		
Pulverulent . . . . .	11.	<i>Uromyces</i> .
Forming a crust . . . . .	12.	<i>Melampsora</i> .
Sori vertical, forming a columella . . . . .	13.	<i>Cronartium</i> .
Teliospores bilocular . . . . .		DIDYMSPORÆ.
Sori horizontal . . . . .	14.	<i>Puccinia</i> .
Teliospores 3, or many-septate . . . . .		PHRAGMOSPORÆ.
Uredospores solitary.		
Teliospores cylindrical.		
Pedicels free . . . . .	15.	<i>Phragmidium</i> .
Pedicels adglutinate . . . . .	16.	<i>Hamaspora</i> .
Uredospores catenulate.		
Teliospores with a thick coat . . . . .		<i>Coleosporium</i> .
Teliospores transversely and longitudinalinally septate . . . . .		DICTYOSPORÆ.

## IMPERFECT UREDINES.

Pseudoperidium present.		
Cup-shaped . . . . .	17.	<i>Æcidium</i> .
Elongated . . . . .	18.	<i>Rastelia</i> .
Pseudoperidium absent.		
Uredospores unicellular, solitary on deciduous pedicels . . . . .	19.	<i>Uredo</i> .

The story of the *Uredines* is hardly to be told within the limits of this introduction, although it is one which has a considerable interest for the agriculturist. We do not pledge ourselves to any theory of heteræcism, inasmuch as we fail to recognize it as satisfactorily proven, but we would not ignore the existence of such a theory, and that it has many followers. To illustrate the phases of these parasites we may accept some species of *Puccinia* as a type. In the first instance the host-plant produces upon its leaves, in the spring, clusters of little cups, partly imbedded in the substance of the leaf, which is usually thickened and discoloured. These little cups constitute the *Æcidium*-form, the margin is usually white and fringed, and the interior filled with orange subglobose spores, produced in chains, but soon falling apart. The æcidiospores will germinate when mature, and produce a thread of mycelium. Smaller bodies are also to be found in company or in proximity,



sometimes on the opposite surface of the leaf. These have the form of minute embedded cells, containing very small hyaline spore-like bodies, called *spermatia*, whilst the cells which contain them are *spermogonia*. What their function may be is as yet only conjectural, but they are nearly always present, and presumably not without a purpose. Later on in the summer, the same, or others, develop on either, or both surfaces, small brownish pustules, at first covered by the cuticle, but at length the pustule splits irregularly, and exposes a powdery brownish dust-like mass of nearly globose spores, each spore borne at first at the apex of a short hyaline thread, these threads arising from a cushion-like base of mycelium. These powdery spores constitute the "rust" or *uredospores*, and with them ends the second stage of the fungus, but how they are evolved from the first stage, or how they produce the third stage, is a mystery still. Nevertheless, the third stage is held to be the complete or perfect stage, and the spores produced are *teleutospores*. These teleutospores are more or less elongated, divided by a septum across the middle into two cells, and supported upon hyaline sporophores, or spore-bearing threads. They are produced in pustules similar to those of the uredospores, and often mixed with them. A few of the teleutospores will sometimes be observed growing within the pustules of the uredospores. When the teleutospores are mature they do not always germinate at once, but a period of rest supervenes, and perhaps they may not germinate until the following spring. Each cell of the teleutospore is capable of sending out a germ-tube, through a special pore, and as this germ-tube grows, the contents of the cell of the teleutospore pass into the germ-tube, and to the extreme end. Ultimately a septum crosses the tube and prevents retreat. One, two, or more buds or processes appear at the end of the germ tube, and in time are converted into secondary spores, or promycelial spores, into which some of the old spore contents pass, and then these smaller bodies are eligible for the production of tubes of mycelium, prepared to find an entrance into the leaf of some new host plant, and commence the cycle over again. Thus, then, we have, in order of succession, spermogonia, æcidiospores, uredospores, and teleutospores, the latter producing promycelial spores, as the most complete and perfect condition of a *Puccinia*.

But all these stages are not always to be found associated together. The chain is not always perfect. In some cases the *Æcidium* only is known, with or without spermogonia, or only the uredospores are known, and in either of these cases the fungi are regarded as imperfect, or imperfectly known Uredines. Besides those cases in which æcidiospores, uredospores, and teleutospores are produced on the same species of host plant, there is another group, which those who have implicit faith in heterœcism contend, produce the æcidiospores, with their spermogonia on one plant, let us say a Berberry, and the uredo-

spores and teleutospores on another quite different species of host plant, let us say, on wheat or barley. This is the contention, but it is not our intention to argue the question here, merely to state the assumption.

Then there is another group in which only the spermogonia, uredospores, and teleutospores are known, and these all occur on the same host plant. Here the æcidiospores are absent.

In a fourth group only the æcidiospores and teleutospores are known, and these occur on the same species of host plant. The uredospores are wanting, or if not absolutely wanting they are only found mixed with the teleutospores, and do not form pustules of their own.

In the fifth group teleutospores only are known, so that both æcidiospores and uredospores are absent, and the teleutospores only germinate after a period of rest. In another group, which is little more than a sub-section, teleutospores only are known, but they germinate at once upon arriving at maturity, without any period of rest. Thus far, then, we have set out briefly the grouping adopted by those who have devoted themselves most actively to the study of *Puccinia* and its allies. A somewhat similar grouping is adopted for *Uromyces*. Our object has been to illustrate wherefore, in the descriptions of some species of *Puccinia*, we have spermogonia, æcidiospores, uredospores, and teleutospores all described as parts of the same whole, whereas in other descriptions only some of these are to be found.

There are two or three small groups still remaining, to which we have made no allusion, although they possess an interest of their own. One of the most noteworthy of these is the *Phycomycetes*, as represented in this "Handbook," but an amplification of the limits of that group as previously entertained. In this idea we have followed Mr. Massée, in his recent volume, "British Fungi, Phycomycetes," etc. The old limitation confined the species to the type of *Mucor*, having the habit of moulds, but with spores enclosed within a sporangium, instead of being produced naked, at the tips of branches. In this aspect the group was assumed to have some relationship to the *Ascomycetes*, in the compound fructification. As here represented, they consist of fungi having a mycelium typically devoid of septa, and parasitic on living plants or animals, or growing upon dead organic substances. Having sexual reproduction by means of oogonia and antheridia, or by the conjugation of similar branches, and an asexual mode of reproduction by means of gonidia, or zoogonidia. The value of the different sections may be gathered from the following arrangement:—

A. *Threads well developed.*

Threads producing sporangia. Asexual reproduction by gonidia developed in sporangia; sexual by zygosporos . . . *Mucoraceæ*.

Threads frequently branched, bearing zoogonidia, or passive gonidia.

Asexual organs gonidia; sexual, oospores . . . *Peronosporaceæ*.

Threads bearing zoogonidia. Asexual reproduction by zoogonidia ; sexual by atheridia and oogonia, producing oospores

*Suprolegniaceæ.*

Threads bearing gonidia. Asexual reproduction by gonidia, and thick-walled resting spores; sexual by zygosporos

*Entomophthoraceæ.*

**B. *Threads obsolete.***

Sporangia alone, without mycelium. Asexual reproduction by zoogonidia; sexual by zygosporos . . . . . *Chytridiaceæ.*

Filiform hyphæ soon disappearing. Sporangia thick-walled

*Protomycetaceæ.*

Some of these sections are unrepresented in this volume, such as the *Saprolegniaceæ*, growing on fish, insects, or aquatic plants, for the most part, and the *Entomophthoraceæ*, which are usually parasitic on living insects. The *Mucoraceæ* has some six representatives, the *Peronosporaceæ* about three, the lower sections *Chytridiaceæ* two species, and the *Protomycetaceæ* a single species. With so small a number no detailed analysis of the genera is necessary. We may be excused for directing the attention of cultivators of garden plants, or field produce, to the devastation caused by the various species associated together in the genera which make up the section *Peronosporaceæ*.

Two small groups, of uncertain affinity, but containing species of the utmost importance, are the *Saccharomycetes*, or yeast fungi, and the *Schizomycetes*, or microbes, which infest the tissues of animals and plants. The individuals composing these groups are often infinitely minute, of low and simple organization, but powerful by their numbers, and the future may have much to reveal to us of their relations to health and disease.

The final order to be alluded to here is the problematic *Myxomycetes*, sometimes called *Myxogastres*, or, by some authors, *Mycetozoa*. The individuals are for the most part small, from the size of a pin's head to that of a rape seed, but occasionally, by confluence, much larger. They inhabit moist situations, growing upon dead leaves, rotten wood, or similar substances, and, in their early state, are soft and gelatinous. This is the vegetative stage, in which it has been assumed that they are offsets from the animal world. The final, or reproductive stage is admitted to be analogous to, if not in affinity with Fungi, producing distinct spores in a powdery mass. These spores on germination "give origin to one, two, or more naked cells, which possess the power of movement, due to the protrusion of pseudopodia, or the presence of a cilium; these cells are known as swarm-cells. The swarm cells possess a nucleus, multiply by bipartition, and eventually coalesce to form a plasmodium in the following manner. After the production of numerous swarm spores by repeated bipartition, little groups are formed by the close approach of two or more of these bodies; these groups often disperse again, but eventually the components of a group coalesce, and lose their individuality; this coalescence

and loss of individuality results in the formation of a small plasmodium, which in some unknown way possesses the power of attracting surrounding free swarm-cells; these at once coalesce, and add to the bulk of the plasmodium. The nuclei of the component swarm-cells retain their individuality in the plasmodium, the latter retaining the power of motion originally possessed by its components, and represents the vegetative phase of a *Myxogaster*.\*

"At the close of the vegetable period the passage of the motile plasmodium into the stationary reproductive condition is abrupt, and takes place as follows:—The surface of the plasmodium becomes elevated into one or usually many protuberances. The original investment of the plasmodium is continuous over these protuberances, into which the whole of the protoplasm passes, leaving behind the remainder of its pellicle attached to the substratum, and known as the hypothallus. When these protuberances, which may be sessile or stipitate, are symmetrical, and individually distinct, they are called sporangia; when sporangia are irregular in form, usually vein-like and creeping, the term plasmodiocarp is used; finally, when the sporangia are densely aggregated, so that their individuality disappears to a greater or less extent, an æthaliu is produced. The three conditions are connected by intermediate links."

Having assumed some one of these forms, the contents of the sporangia gradually become dry and powdery, and consist of mostly globose or subglobose spores, mixed with delicate threads, often forming a network, and known as the *capillitium*. This capillitium may originate from a central columella, or from the base of the sporangium, and, when not forming a network, radiates from the centre to the periphery. By rupture of the walls of the sporangia the spores are dispersed.

The classification of these organisms, which has been adopted in the present work, recognizes five orders, and several sub-orders, as follows:—

Wall of sporangium not encrusted with lime.	
Capillitium absent or formed from wall of the sporangium . . . . .	PERITRICHACEÆ.
Wall of sporangium not perforated :	<i>Tubulinæ</i> .
Wall of sporangium perforated . . .	<i>Cribrariæ</i> .
Capillitium originating from a central columella . . . . .	COLUMELLIFERÆ.
Springing from every part of the elongated columella . . . . .	<i>Stemoniteæ</i> .
Springing from the apical portion only . . . . .	<i>Lamprodermeæ</i> .
Capillitium not springing from a colu- mella . . . . .	CALOTRICHACEÆ.

\* Massee, "Monograph of the Myxogasters," p. 5, 1892.

Threads free, not anastomosing . . .	<i>Tricheæ.</i>
Threads attached, with free ends, or combined in a network . . . . .	<i>Arcyriæ.</i>
Wall of sporangium with external deposit of lime.	
Capillitium present . . . . .	LITHODERMÆÆ.
Threads without lime . . . . .	<i>Didymææ.</i>
Threads containing lime . . . . .	<i>Physarææ.</i>

The above arrangement differs from that adopted by Rostafinski, and most of the continental botanists, especially as to the sequence of the orders and suborders; but in detail there is little difference in the alliance and limitation of genera and species.

Thus much we have considered it advisable to provide for the benefit of the uninitiated, as a prelude or introduction to the technical descriptions which follow, and although brief and insufficient for such as may be entirely ignorant of the organisms treated of in this volume, yet probably welcome to those who have acquired a little knowledge and interest in an obscure and somewhat neglected branch of botanical science. A complete and satisfactory introduction to the study could scarcely have been accomplished in less space than is contained within the covers of this book, which would have been foreign to its original scope and design.

It would be difficult to estimate the number of Australian species of fungi which are really edible, since in very few instances can we go further than those which are known to be edible in Europe, and hence it can only be affirmed with certainty that there are nearly seventy species, in all, which can be relied upon. Of these, beside the common mushroom, are the well-known *Cantharellus cibarius*, the beautiful *Cortinarius violaceus*, the very useful *Coprinus comatus*, the European *Hydnum repandum*, and *coralloides*; several kinds of *Clavaria*, including *Sparassis crispa*; some Boleti, such as *Boletus edulis*, *Boletus granulatus*; half-a-dozen species of *Peziza*, and undoubtedly all the species of *Morchella*, or the "Morels." But there is no true Truffle at present known, and, if the *Mylitta* is edible at all, which in its dried state seems to be impossible, there is no account of it, or its properties, known to us. Possibly some of the Lycoperdons are harmless enough, in their young and juicy condition, but there is something very suspicious, not to say repulsive, in the odour of the species of *Clathrus*, that it seems hard to believe that *Clathrus cibarius* is worthy of its reputation as an edible species. The gastronomic value must be determined in the Colonies, although we would advise the utmost caution in such experiments.

Of deleterious species there are, unfortunately, many, not so much toxicological as pestiferous, and in this we allude to those minute species which attack, and destroy, plants of economic value, such as the vine diseases, apple scab, tobacco mildew, and many others, which it is beyond the province of

this volume to do more than enumerate and describe. As it is in animal diseases so it is with those of plants, that a true diagnosis must precede any attempts at remedy. All that a work of this kind can accomplish is to supply the data whereby the true character of the attacking fungus can be ascertained, its relationships, and its methods of reproduction, and hence conclusions may be drawn as to the best methods of applying remedial measures. Empirical methods may sometimes succeed by chance, but the only real prospect of permanent success is based upon a certain knowledge of the character of the disease, and the life history of the parasite producing it. It must be remembered that these pestiferous fungi are primarily of two kinds, viz., those which are *epiphytal*, developed upon the surface of the green parts, and attaining their end by choking up the stomata, preventing transpiration and killing the plant by suffocation; or they are *endophytal*, being produced within the substance of the tissues, and establishing themselves long before there is any external manifestation of their presence. The former class of diseases find a representative in the disease of the vine called *Erysiphe viticola*, and its conidial stage, which is a species of *Oidium*, or effused white mould. In such a case, as in the allied European vine disease, caused by *Oidium Tuckeri*, and the common hop mildew, *Sphaerotheca Castagnei*, the application of sulphur has proved effectual, as the disease is external, and amenable to the action of fungicides. But in the other and larger class of diseases the fungi are either hereditary, or the mycelium, developed from germinating sporules, enter the young plants secretly, and commence the work of destruction by permeating the substance of the tissues. The latter class includes the rust, smut, and mildew of corn crops, and, in fact, all that group of fungi which are described in this volume under the title of *Hypodermææ*. In addition to these are the rotting moulds, included under *Peronospora* and its allies, as well as the species of *Fusicladium*, causing the "apple scab," and numerous other groups of more or less importance, notably of the genus *Glaeosporium*. With these pests prevention is better than cure, since the application of external remedies will fail to reach the basis of disease, or either destroy the parasite, or restore the diseased tissues to healthy action. Clearly, then, the only safe course is to ascertain accurately the nature of the disease, which can only be done by a patient microscopical examination, and, by taking advantage of the knowledge of its methods of reproduction, to destroy the germs, or sporules, check its extension, and "stamp it out."

By means of a passing reference to those terrible moulds which attack the potato, tobacco, and tomato, and known generally as *Peronospora*, we may indicate what we intend to convey by "knowledge of life history," and how this knowledge may be turned to account. As a starting point we take

a conidium, or spore-body, such as will be produced, by scores, on every fertile thread of the mould when mature. This conidium is an elliptical, colourless, minute body, having a thin outer coating of membrane, with fluid contents. These contents soon become granular, and at length collect at three or four centres, which condense and ultimately are distinctly separated from each other by the growth of a special envelope. Ultimately the membrane of the mother cell is ruptured, and the three or four smaller bodies which have been differentiated in its interior escape, each one furnished at one extremity with a pair of delicate moveable hairs, by means of which these little bodies, now termed *zoospores*, can swim actively in any thin film of moisture upon which they may fall. Possibly this film may be on the leaf of a foster plant. In a short time all motion ceases and the zoospores come to rest, the pair of delicate cilia are absorbed and a germinating thread is produced, the point of which seeks out and enters at one of the stomata of the sustaining plant. Having once obtained an entrance the thread grows vigorously, and a little mass of threads, called a mycelium, is soon developed within the tissues, capable of spreading itself through the plant which it has infected. In the next stage we discover that this mycelium has developed erect branched threads, which pass out through the stomata again into the external air, sometimes singly, sometimes in tufts. These are the fertile threads of the mould, which soon produce a single conidium at the tip of each of the branchlets, just like the original conidium whence the zoospores were developed. When fully matured each fertile thread produces a score or more of these conidia, which fall away when ripe, and then undergo transformation into zoospores, ready and active, prepared to pass through the same stages again, and indefinitely multiply the pest. This history represents the ordinary conidial fructification of the mould, by means of which it is passed from leaf to leaf, and from plant to plant, until the whole area is affected. How many of the minute conidia may be transported to a considerable distance by a breath of wind it is impossible to say, but it is known that they are capable of suspension in the air, and that they may be carried to any spot where there is sufficient moisture for the conidia to be differentiated into zoospores, and afterwards come to rest and germinate. This process takes place in summer and autumn, but there is yet another means by which the pest is disseminated in the spring.

The mycelium which flourishes within the substance of the plant infested is capable of producing larger globose bodies, chiefly within the stems, concealed from external view. These globose bodies secrete a thick envelope, mostly of brownish colour, and after development they remain in a state of rest within the stems during the winter. So that old stems of plants which are infested with the mould during the autumn

conceal within themselves during the winter a large number of these "resting spores." As the old stems rot and decay the resting spores are set free in the spring, and then a period of activity commences. The contents of these globose bodies become differentiated into a large number of zoospores, which ultimately escape, by a rupture of the thick envelope, armed with vibratile cilia, and in all respects like the zoospores which are developed from the conidia. These active zoospores swarm over the damp soil, and are carried by the spring rains into proximity with the young seedling leaves of the new crop of host plants, then the cilia are absorbed, germination commences, the delicate threads of mycelium enter the nearest stomata, and infection results. In this way, in addition to the spread of the infection from conidia in summer and autumn, provision is made for an attack upon seedlings in the spring. It will be inferred that, in order to check the spread of these diseases, the conidia must be destroyed in the autumn, to prevent their extension to healthy plants, and the destruction of all rotting *débris* must be carried out during the winter, so as to extirpate all the concealed resting spores, and thus prevent the infection of seedlings in the spring. Thus it will be seen that a knowledge of the life history of these parasites will suggest the best methods to be employed in their destruction.

With these suggestions we must quit a subject which would require considerable space to illustrate fully, or we might allude to such corn diseases as "rust" and "mildew," in order to demonstrate still further that all hope of alleviating the mischief they cause must be based upon knowledge of the conditions favourable or unfavourable to the reproduction and dissemination of the specific diseases.

It cannot be considered out of place to urge the importance which attaches to fungi, as well as to other branches of the Cryptogamia, that for the purpose of determining the species, and even the genera, the specimens collected should be in a perfect and fructifying condition. A very casual glance at the following pages will be sufficient to carry the conviction that everything depends upon the spore, or its analogue. The true relations of an Agaric can only be sought for after the determination of the colour of the spores. All the minute species in which the fructification is enclosed in a perithecium, having the habit of a *Sphaeria*, must, in the first instance, exhibit fruit before it can be affirmed whether, by virtue of the presence of asci, it should have its place in the *Ascomycetes*, or, on account of their absence, among the *Sphaeropsidea*. Moulds, again, which are devoid of conidia, are no better than a condition of mycelium, and their relations cannot even be guessed at. Spotted leaves are collected by novices, almost in myriads, under the impression that whenever a living leaf has become spotted, such spotting is produced by a fungus. The assump-



tion may often be correct, but not always, and even when correct something more is required, for the evidence must be present as to what kind of fungus has produced the spotting, and this evidence depends on the presence of fructification. Many a weary hour of fruitless labour may be expended in the examination of spotted leaves which do not furnish the organs essential to an accurate diagnosis. Hence it will be evident that the mere collector must acquire sufficient elementary information to guide him, and prevent the accumulation of a store of waste material, in which a pocket lens will show no probabilities of fungoid growth in some condition of fructification. A little knowledge and experience may be sufficient to determine the presence of reproductive organs in some form or other, even when larger experience and a more extended knowledge may be essential for accurate determination.

Information is continually being sought as to the best means of preserving fleshy fungi, so as to forward them to distant places for identification. It is by no means easy to furnish such advice, but the attempt must be made. The large woody *Poly-porei*, and the leathery species of *Stereum*, only require to be dried (flattened where possible) to be available for the herbarium. With the soft and fleshy *Agarics* the case is different, as they shrink out of all recognition, change colour, and are liable not only to decay, but also to quick demolition by insects. No satisfactory determination of these can be made unless accompanied by sketches of the form, size, and colour as in life. It is not absolutely essential that they should be coloured, although that is best, but the colours must always be stated on the drawings. To assist those who are not facile with the pencil, it is recommended that the specimen collected should be divided longitudinally through the cap and down the centre of the stem. When this is done one half should be laid on a sheet of white paper, with the cut surface downwards, and the outline traced carefully upon the paper with a sharp pointed pencil. On removing the specimen there will be left upon the paper an outline of the form of the Agaric, natural size. This may be completed by hand, drawing in the line marking the margin of the cap, indications of scales on the pileus (if any exist), the character of the ring (if present), and the scales, lines, or markings of the stem. Another copy of the section, made side by side, on the same paper, would give the outline of the gills, and by a little care and practice it would be found easy to draw the line from the stem to the edge of the cap, indicating the point of junction of the gills with the flesh of the cap. This should be done very carefully and accurately, as it must be depended upon to show whether the gills are quite free from the stem at their inner extremity, or whether they are adnexed, or whether they are decurrent, and to what extent they run down the stem. Then, also, it should be shown if the stem is solid or hollow. A little colouring, even if not

artistic, would be more useful than mere description of the general appearance of the Agaric. Then should follow copious notes, embracing all the points essential to a true diagnosis—whether growing on wood or on the ground; whether viscid when fresh, or perfectly dry; whether of an agreeable or fœtid odour; whether acrid to the taste, or pungent, or mild; whether moderately persistent or deliquescent; and, if the sketch is not coloured, then to state the colour of the cap, the stem, and the gills, as explicitly as possible. It need scarcely be added that the locality and date should be indicated, together with a number, which should also be attached to the specimens, or their remains. These latter should be dried as thoroughly as possible, and sent with the sketches.

The only process of drying which can be recommended, as applicable abroad, is to expose the Agarics or Boleti, or other fleshy fungi, to a free current of air, so as completely to deprive them of moisture. Care must be taken at this point that the specimens are not attacked by insects. When dried, but not brittle, a little pressure may be used so that the specimens may be flattened to assure greater convenience in packing. Carefully cut sections through the centre of the pileus and stem would be an advantage, but insufficient by themselves. These may be dried between moderately absorbent paper, which requires changing every few hours. Collections made in this manner have always been successful, in proportion as the instructions have been carried out. It is useless to send specimens of this kind abroad in spirits, or any kind of preserving fluid, as they entirely lose colour, and, in some cases, are completely destroyed.

Leaf fungi only require to be dried *flat*, in the same manner that the foliage of flowering plants is dried for the herbarium, under pressure. All indications of colour should be given, wherever this is liable to be changed in drying, or by age.

Fleshy fungi, when undergoing a long voyage, are liable to the incursions of insects, and especially of a marauding weevil. If sketches are made, the specimens may be poisoned before packing, but in all cases they should be quite dry when packed, and carbolic acid should not be used; corrosive sublimate usually answers the purpose fairly well, but some of the weevils do not seem to object to it.

# HANDBOOK

OF

## AUSTRALIAN FUNGI.

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### *Family I. HYMENOMYCETES.*

Mycelium floccose, giving rise at once to a distinct hymenium, or producing a variously shaped, naked, or volvate receptacle, even, or bearing on its upper or under surface various folds, plates, prickles, &c., clothed with fertile hymenial cells. Spores naked, mostly quaternate, on distinct spicules. *Berk. Introd. p. 351.*

Hymenium, normally inferior—

Fruit-bearing surface lamellose . . . . .	<i>Agaricini.</i>
Fruit-bearing surface porous or tubular . . . . .	<i>Polyporei.</i>
Fruit-bearing surface clothed with prickles. . . . .	<i>Hydnei.</i>
Fruit-bearing surface even . . . . .	<i>Thelephorei.</i>

Hymenium, superior or encircling—

Clavate or branched, rarely lobed . . . . .	<i>Clavariæi.</i>
Lobed, convolute, or disc-like, gelatinous . . . . .	<i>Tremellini.</i>

### *Order 1. AGARICINI.*

Hymenium inferior, spread over easily-divisible gills or plates, radiating from a centre or stem, which may be either simple or branched.—*Fr. Epicr. p. 2.*

#### GENUS 1. **AGARICUS.** *Linn. Syst. Nat. (1725).*

Spores of various colours; gills membranaceous, persistent, with an acute edge; trama floccose, confluent with the inferior hymenium. Fleshy fungi, putrifying, and not reviving when once dried, hence differing from such genera as are deliquescent, coriaceous, or woody.

This genus is divided into five series, according to the colour of the spores—1, *Leucospori*; 2, *Hyporhodii*; 3, *Dermatini*; 4, *Pratelli*; 5, *Coprinarii*.

Series 1. **Leucospori.** Spores white.*Sub-Genus 1. AMANITA. Pers. Syn. p. 246.*

Veil universal, at first completely enveloping the young plant, distinct and free from the cuticle of the pileus; pileus convex, then expanded, not decidedly fleshy; stem distinct from the hymenophore, ringed, furnished with a volva, free and lax, connate with the base, or friable and nearly obsolete; gills free from the stem.

a. *Volva splitting at the apex, border free, persistent.*

**1. Agaricus (Amanita) ovoides.** *Bull. Champ. t. 364. Fr. Hym. Eur. 18. Sacc. Syll. No. 3.*

White, pileus hemispherical, expanded, *margin inflexed*, exceeding the gills, even (6-13 c.m. broad), stem solid, bulbous, scaly and mealy (8-12 c.m. long,  $1\frac{1}{2}$ -3 c.m. thick), volva lax, ring broad and lax; gills free, ventricose; spores ellipsoid,  $10-12 \times 6-7 \mu$ .

On the ground. Victoria.

**2. Agaricus (Amanita) Preissii.** *Fr. Fl. Preiss p. 131. Sacc. Syll. No. 4.*

Pileus fleshy, convex, then expanded, viscid, margin even; stem stuffed, furfuraceous, pallid, volva turnip-shaped, rooting, constricted at the apex, with a persistent free border; ring near the apex reflexed; gills adnate, crowded.

In sandy soil, woods, etc. W. Australia.

**3. Agaricus (Amanita) vernus.** *Bull. Cooke Illus. t. 3. Fr. Hym. Eur. 18.*

Pileus at first ovate, then expanded, rather depressed, viscid (10-12 c.m. broad), white; margin naked, smooth; stem stuffed, equal, floccose, base bulbous (12 c.m. long, nearly 2 c.m. thick), volva closely *embracing the stem* with its free margin; ring reflexed; gills free. Spores  $10 \times 7 \mu$ .

In woods. Victoria. Queensland. (Fig. 1.)

**4. Agaricus (Amanita) mappa.** *Batsch. Fries Hym. Eur. 19. Sacc. Syll. 8. Cooke Illus. t. 4.*

Pileus convex, then plane, without separable cuticle, *dry*; margin nearly even (6-8 c.m. broad), flesh white; stem stuffed, then hollow, cylindrical, nearly smooth, bulbous, nearly globose at the base (8-10 c.m. long, slender) volva *circumscissile*, with its free margin acute and narrow, ring superior, membranaceous; gills adnexed, ventricose, white. Spores sphaeroid,  $7-9 \mu$  diam.

On the ground. Victoria.

**5. Agaricus (Amanita) strobilaceus.** *Cke. Grev. XIX., 82.*

Pileus convex, hemispherical (8 c.m. diam.), covered with large, persistent, obtusely conical warts, after the manner of a fir cone, down to the incurved margin, ochrey-yellow. Stem short, stout, solid, slightly incrassated at the base, ring superior, volva closely adnate, circumscissile, marginate, longitudinally sulcate (8 c.m.  $\times$

3 c.m.). Gills rather narrow, free, leaving a channel round the stem. Spores small, hyaline,  $5 \times 2\frac{1}{2} \mu$ .

On the ground. Victoria.

**6. Agaricus (Amanita) murinus.** *Oke. & Mass. Grev. XVIII., 1, pl. 174.*

Pileus campanulate, then expanded, obtusely umbonate, shining, mouse coloured, nearly naked, margin slightly striate ( $1\frac{1}{2}$ -2 in.); stem thin, straight ( $3 \times \frac{1}{2}$  in.), whitish, a little fibrillose below, ring pendulous. Volva bulbous, lax, gills free, rather crowded, white, or slightly tinted with rose. Spores  $7 \times 5 \mu$ .

On sandy soil. Queensland. Victoria.

b. *Volva definitely cut round, base marginate, persistent.*

**7. Agaricus (Amanita) muscarius.** *Linn. Cooke Illus. t. 117. Fr. Hym. Eur. 20.*

Pileus convex, then expanded, orange scarlet, clothed with scattered warts, the remains of the volva, margin striate, flesh beneath the viscid cuticle yellowish (6-14 c.m. broad); stem stuffed, bulbous at the base (8-12 c.m. long,  $1\frac{1}{2}$ -2 c.m. thick); volva adnate, concentrically scaly; ring lax, deflexed; gills reaching the stem and forming decurrent lines upon it. Spores  $10 \times 8 \mu$ .

Woods, especially fir and birch. Victoria.

**8. Agaricus (Amanita) ananiceps.** *Berk. Hook. Journ. VIII., 572. Sacc. Syll. No. 36.*

Pileus broad, convex, smooth, shining (3-4 in.), breaking into areolæ at the centre, each bearing a conical wart, margin even, but the volva appendiculate; stem elongated, with a marginate bulb, and thickened near the gills; gills ventricose, attenuated behind, veil soon obliterated. Spores globose, muriculate,  $8 \mu$  diam.

On the ground. Queensland. Tasmania.

c. *Volva entirely friable.*

**9. Agaricus (Amanita) spissus.** *Fr. Hym. Eur. 23. Cooke Illus. t. 69.*

Pileus convex, then plane, amber with a greyish tinge, rough with minute aduate mealy warts (10-12 c.m. broad); margin smooth, flesh firm, white, unchangeable; stem stuffed, firm, attenuated upwards, squamulose (6-8 c.m. long,  $1\frac{1}{2}$ -2 c.m. thick); ring entire; gills adnexed, with decurrent lines on the stem. Spores  $8 \times 6 \mu$ .

In woods. Lake Bonney.

*Sub-Genus 2. AMANITOPSIS, Roze.* Stem volvate, but without a ring.

**10. Agaricus (Amanitopsis) grossus.** *Berk. Fl. Tasm. II., 242. Sacc. Syll. 23.*

White; pileus thick, fleshy, plano-hemispherical, warted, sometimes areolate (10 c.m. broad); stem bulbous, fibrillose (3 in. long,

1 in. thick); ring obsolete; volva adnate; gills broad, rounded, adnate; spores subglobose,  $8\ \mu$  diam.

On the ground. Tasmania.

**11. *Agaricus (Amanitopsis) vaginatus.*** *Bull. Fr. Hym. Eur.* 27. *Cooke Illus.* t. 12.

Pileus thin, campanulate, then nearly plane, grey, brown, etc., margin membranaceous, deeply sulcate (6-8 c.m. broad); stem fistulose, attenuated, fragile (10-14 c.m. long, 1 c.m. thick), flocculoso-squamoso; volva sheathing, loose; gills free, white, then pallid. Spores  $10\ \mu$  long.

In woods and under trees. Edible. N.S.Wales. Queensland. Victoria.

**12. *Agaricus (Amanitopsis) illudens.*** *Cke. & Mass. Grev.* xvi., p. 30, pl. 175, fig. A.

Pileus convex (1 in. diam.), ochraceous yellow, clad with scattered, broad, unequal warts, which soon fall away; margin even; stem slender, fistulose, equal (2 in. long, 2-3 lines thick); ring obsolete, volva sheathing; gills free, attenuated behind, white, edge serrulate; spores oval,  $8 \times 6\ \mu$ .

On the ground. Victoria. (Fig. 2.)

**13. *Agaricus (Amanitopsis) farinaceus.*** *Cke. & Mass. Grev.* xviii., 1, pl. 175, fig. B.

White, wholly mealy. Pileus fleshy, convex, then flattened ( $2\frac{1}{2}$ -3 in.), whitish, sprinkled with erect prominent warts, chiefly at the disc, margin thin, veil adnate, fimbriate; stem equal ( $3\text{-}4 \times \frac{1}{2}$  in.) without ring, stuffed, white; volva bulbous, with the free margin crispate; gills free, rather broad, crowded, white, then yellowish. Spores globose,  $10\ \mu$ .

On the ground. Queensland.

**14. *Agaricus (Amanitopsis) curtus.*** *Cke. & Mass. Grev.* xvii., 72, pl. 176, fig. A.

Pileus convex, then flattened, ochraceous white, even, smooth ( $2\text{-}2\frac{1}{2}$  in. diam.), veil appendiculate at the margin; stem short (1 in. or less long), solid, bulbous, brick red, smooth; volva broad, circumscissile, marginate, fibrillosely rooting at the base; gills free, remote, rather distant, narrow, white; spores elliptical,  $19\text{-}22 \times 10\ \mu$ .

On the ground. Victoria.

**15. *Agaricus (Amanitopsis) pulchellus.*** *Cke. & Mass. Grev.* xviii., 1, pl. 176, fig. B.

Pileus convex, then expanded (1-2 in.), vermilion, clad with irregular deciduous whitish warts; margin saffron-yellow, faintly striate; stem soon hollow, white ( $2\text{-}2\frac{1}{2}$  in.  $\times$   $\frac{1}{4}$  in.); volva adnate, marginate, base ovate, bulbous; ring obsolete; gills free, ventricose, crowded, white, at length tinged with yellow; spores subglobose,  $7\text{-}8\ \mu$ .

On the ground. Victoria.

*Sub-Genus 3. LEPIOTA, Fr.* Universal veil concrete with the pileus, gills free, often remote. Volva absent. Stem generally distinct from the hymenophore.

\* *Epidermis dry.*

a. *PROCERI. Ring movable.*

**16. *Agaricus (Lepiota) procerus.*** *Scop. Fr. Hym. Eur.*  
29. *Cooke Illus. t. 21.*

Pileus fleshy, soft, at first ovate, then expanded and umbonate, (6-14 c.m. broad); *cuticle thick, torn up into broad evanescent scales*; stem hollow, tall, bulbous, variegated with adpressed scales (16-20 c.m. long, 1 c.m. thick); ring movable; gills very remote. Spores 12-14  $\times$  8-9  $\mu$ .

Pastures. Esculent. Victoria. N.S.Wales. Queensland. Tasmania.

**17. *Agaricus (Lepiota) rachodes.*** *Vitt. Fr. Hym. Eur.*  
29. *Cooke Illus. t. 22.*

Pileus fleshy, soft, at first globose, then expanded and depressed (8-10 c.m. broad); *cuticle thin, broken into persistent scales*, stem hollow, attenuated, smooth, immaculate, bulb at first abrupt (10 c.m. or more long, scarcely 1 c.m. thick); ring lacerated, movable; gills remote. Spores 10  $\times$  6  $\mu$ .

In shady pastures. Esculent. Victoria.

**18. *Agaricus (Lepiota) excoriatus.*** *Schff. Fr. Hym. Eur.*  
30. *Cooke Illus. t. 23.*

Pileus fleshy, soft, obscurely umbonate, pale fawn colour (5-6 c.m. broad); *cuticle thin, breaking up into scales*, stem hollow, short, *cylindrical*, scarcely bulbous (3-5 c.m. long), smooth, white, ring movable; gills rather remote. Spores 12  $\times$  8  $\mu$ .

In pastures. Esculent. Victoria. N.S.Wales. Queensland. W. Australia.

**19. *Agaricus (Lepiota) mastoideus.*** *Fries. Hym. Eur.* 30,  
*Cooke Illus. t. 24.*

Pileus rather fleshy, soft, ovate, then expanded, and acutely umbonate; *cuticle thin, breaking up into scattered papillæ* ( $1\frac{3}{4}$  in. across), stem hollow, equally attenuated from the bulb, weak, smooth (3 in. high), ring entire, movable, gills very remote, pallid. Spores 7-8  $\times$  5  $\mu$ .

On the ground. Victoria. Queensland. Barossa Range. Cudgegong River.

**20. *Agaricus (Lepiota) dolichaulus.*** *Berk. & Br. Linn. Trans.* xxvii., pl. 150. *Grev.* xviii., pl. 177.

Pileus fleshy, expanded, umbonate, centre smooth, otherwise punctately squamulose (10-20 c.m. broad), margin torn and appendiculate, flesh white, unchangeable; stem elongated, straight, nearly equal, except at the base, where it is bulbous (16-20 c.m. long, 1 c.m. thick); apex penetrating, flocculose punctate,

hollow, ring broad, deflexed and torn; gills broad, ventricose, very remote. Spores  $10 \times 6\text{--}7 \mu$ .

On the ground. Queensland.

**21. Agaricus (Lepiota) lepidophorus.** Berk. & Br. *Ceylon Fungi*, p. 498. Sacc. *Syll.* No. 170.

Pileus campanulate, papillately umbonate, then plane ( $2\frac{1}{2}$ –3 c.m. broad), rather fleshy, obtuse, white, sprinkled with minute reddish scales, stem attenuated upwards (4 c.m. long, 2 c.m. thick), stuffed, ring movable; gills ventricose, approximating to the stem, lemon-yellow. Spores  $8 \mu$  long.

On the ground. N.S. Wales.

**22. Agaricus (Lepiota) rhytipelta.** Müell. Linn. Soc., N.S.W., 1882, p. 104.

Pileus fleshy, ovate-campanulate ( $1\text{--}1\frac{1}{2}$  in. diam.), at first umber, smooth at the umbo, then around the periphery breaking up into thick scales, otherwise silky-striate and white; stem nearly equal (3–4 in. long, 2–3 lines thick), dilated and rather bulbous at the base, smooth, white, turning brownish downwards; ring movable, membranaceous, persistent; gills ventricose, broad, rather crowded.

On the ground. Lake Muir, Muellersville, and Western Port.

**23. Agaricus (Lepiota) ochrophyllus.** Cke. & Mass. *Grev.* xviii., 2, pl. 178.

Pileus fleshy, convex, then flattened, obtuse, pale ochre, variegated with darker concentric innate scales (4–6 in. broad), margin faintly striate; stem solid, erect, smooth, at length striate, fibrillose (7 in. long, 1 in. thick), bulbous and turbinate at the base, of the same colour; ring superior, pendulous, sometimes double; gills broad, attenuated behind, free, rather crowded, ochraceous. Spores elliptical,  $12 \times 8 \mu$ .

On sandy ground. Queensland.

**b. CLYPEOLARI.** Ring fixed, homogeneous, with universal veil clothing the stem.

**24. Agaricus (Lepiota) clypeolarius.** Bull. Fr. Hym. Eur. 32. Cke. *Illus.* t. 38.

Pileus fleshy, soft, umbonate, at first with an even crust, at length broken into floccose adpressed scales (3–4 c.m. broad); variable in colour, white, yellow, pink, rufous, brown, etc.; stem fistulose, thin, almost equal (5–7 c.m. long, 2–3 m.m. thick); ring evanescent, floccoso-squamose; gills free, approximate. Spores  $6 \times 4 \mu$ .

In woods and hot-houses. Queensland. Victoria.

**25. Agaricus (Lepiota) Beckleri.** Berk. Linn. Journ. xiii., p. 156. Grev. xix., pl. 179, fig. A.

Pileus subglobose or campanulate, umbonate, spongy, tomentose, rough about the apex with little scales; stem long, very



minutely warted, becoming smooth, equal, with a tuberos root, ring broad, deflexed; gills broad, ventricose, attenuated behind. Spores  $14 \times 8 \mu$ , sometimes  $16 \times 10 \mu$ .

On the ground in scorched places. N.S.Wales.

**26. Agaricus (Lepiota) stenophyllus.** Cke. & Mass. Grev. xv., 98, xix., pl. 179, f. B.

Pileus fleshy, soft, hemispherical, then plane, the brownish cuticle broken into depressed scales, margin incurved (about  $1\frac{1}{2}$  in. broad). Stem long (5 in. long,  $\frac{1}{4}$  in. thick above, twice as thick at the base), bulbous, fistulose, smooth, whitish; superior ring deciduous. Gills linear, free, very narrow, white. Spores elliptical,  $12 \times 7-8 \mu$ .

On the ground. Mount Wellington. Queensland.

**27. Agaricus (Lepiota) subclypeolaris.** Berk. & Curt., Journ. Linn. Soc. x., 283. Sacc. Syll. No. 237. Grev. xix., pl. 180, fig. A.

Pileus oval, then plane, thin, radiately striate, floccose squamose, white, umbo dusky; stem nearly equal, smooth, white, with a median ring; gills distant, free, remote from the stem. Spores elliptical,  $8 \mu$  long.

On the ground. Victoria.

**28. Agaricus (Lepiota) fimetarius.** Cke. & Mass. Grev. xviii., 1.

Pileus fleshy, thin, campanulate, obtusely umbonate ( $\frac{1}{2}-\frac{3}{4}$  in. broad), pallid, floccose, ornamented with darker adnate floccose scales. Stem (1-2 in. long) slender, nearly equal, squamulose below; ring fugacious; gills free, lanceolate, crowded, white. Spores ovate, apiculate,  $7 \times 5 \mu$ .

On dung. Queensland.

**29. Agaricus (Lepiota) cristatus.** Alb. & Schw. Fr. Hym. Eur. 33. Cooke Illus. t. 29.

Pileus slightly fleshy, rather obtuse, white, cuticle at first continuous, naked, then broken into *subgranulose evanescent rufous scales* (2-5 c.m. broad). Stem fistulose, slender, even, equal (4-5 c.m. long, 2 m.m. thick); ring entire, evanescent; gills free, at length remote. Spores  $7 \times 4 \mu$ .

In fields, lawns, etc. Victoria. Tasmania.

c. ANNULOSI. Ring superior, fixed, subpersistent. Universal veil adnate to the pileus.

**30. Agaricus (Lepiota) rhizobolus.** Berk. Hook. Journ. (1845), p. 42. Sacc. Syll. No. 119.

Pileus convex, fleshy, shining, white, centre ornamented with pyramidal wart-like scales; veil marginal; stem smooth, short, bulbous; gills rather broad, free.

On the ground. West Australia.

**31. Agaricus (Lepiota) naucinus.** *Fries. Hym. Eur.* 34.  
*Cooke Illus. t.* 15.

Pileus fleshy, soft, cuticle thin, entire, or breaking up into *evanescent granules*, somewhat umbonate and smooth in the centre; stem almost hollow, thickened at the base, attenuated upwards, fibrillose; ring large, at length evanescent; gills approximate, whitish.

In fields. Victoria.

var. **sphaerosporus.** *C. & Mass. in Grev.* XVIII., 5.

Spores globose, 10-12  $\mu$ .

On the ground. Queensland.

**32. Agaricus (Lepiota) bubalinus.** *Berk. Linn. Journ.*  
XIII., p. 156. *Sacc. Syll. No.* 243. *Grev. t.* 181.

Snowy white; pileus ovate or somewhat hemispherical, then expanded, broadly umbonate (5-6 c.m. broad); stem thickened downwards, and tomentose (6-8 c.m. long, 1 c.m. thick); gills narrow. Spores 7-8  $\times$  5  $\mu$ .

On cow dung, etc. Victoria. West Australia.

**33. Agaricus (Lepiota) cheimonoceps.** *Berk. & Curt.*  
*Cuban Fungi*, p. 283. *Sacc. Syll. No.* 236.

Snowy white; pileus thin, pulverulent, here and there appendiculate; stem thickened downwards, furfuraceous, ring torn; gills remote, rather broad. Spores subglobose, 8  $\times$  6  $\mu$ .

On trunks. Queensland.

**34. Agaricus (Lepiota) leontoderes.** *Berk. & Br. Ceylon*  
*Fungi*, 499. *Sacc. Syll. No.* 234. *Grev. t.* 180, f. B.

Pileus convex, umbonate, tawny, clad with a few pallid warts; stem attenuated upwards from the truncate base (8 c.m. long, 3-5 m.m. thick), spotted, stuffed, then hollow; ring descending, torn, fugacious; gills broad, rounded behind, approaching the stem, paler. Spores 8  $\mu$ .

On the ground. Queensland.

**35. Agaricus (Lepiota) obclavatus.** *Cke. & Mass. Grev.*  
XVI., 30.

Pileus rather fleshy, convex, then plane, scarcely umbonate, furfuraceous, rufous with a tawny tinge, disc darker, flesh reddish (1 in. diam.); stem slender, cylindrical, fistulose, abruptly thickened and bulbous at the base (3-4 in. long,  $\frac{1}{2}$  in. thick at the base), smooth, flesh-colour, darker below; ring thin, fugacious; gills crowded, narrow, free, white. Spores elliptical, hyaline, 10-12  $\times$  6  $\mu$ .

On charred ground under *Eucalyptus*. Victoria.

**36. Agaricus (Lepiota) licmophorus.** *B. & Br. Linn.*  
*Journ.* XI., 50.

Pileus lemon-coloured, membranaceous, 1 in. diam., deeply *plicato-sulcate* up to the disc; margin crenate; stem attenuated upwards, fistulose (3 $\frac{1}{2}$  in. long, 1 line thick), truncate at the base;

ring about half-way up; gills distant, slightly arched, remote, interstices veined.

On ground. Victoria.

**37. *Agaricus (Lepiota) cepæstipes.*** Sow. *Fr. Hym. Eur.* 35.  
*Cooke Illus. t. 5.*

Pileus submembranaceous, ovate, then expanded, mealy and squamose with evanescent plumose scales, disc fleshy, and broadly umbonate (1-3 in. broad), margin plicate; stem hollow, floccose, thickest in the middle or at the base (3-6 inches high), ring evanescent; gills at length remote. Spores  $6 \times 5 \mu$ .

On the ground. Queensland.

var. **cretaceus.** Bull. *Cooke Illus. t. 942.*

Pileus chalky white, with darker scales.

On the ground. Queensland.

d. **GRANULOSI.** *Universal veil of the pileus and stem at first continuous, by rupture forming an inferior ring.*

**38. *Agaricus (Lepiota) granulosus.*** Batsch. *Fr. Hym. Eur.* 36. *Cooke Illus. t. 18.*

Pileus fleshy, convex, then expanded, soft, tawny, mealy with innate granules (3 c.m. broad), stem stuffed, then hollow, nearly equal, floccoso-squamose below the ring (4-7 c.m. long, 4 m.m. thick); gills crowded, reaching the stem, or free, white. Spores  $5 \times 3 \mu$ .

In woods and on heaths. Victoria. Queensland.

**39. *Agaricus (Lepiota) aspratus.*** Berk. *Hook. Journ.* 1847, p. 481. *Sacc. Syll. No. 150.*

Pileus hemispherical, at length depressed, pallid yellow, often deep orange, rough with warts composed of fasciculate flocci (2-4 c.m. broad); stem nearly equal, floccosely scaly (2 c.m. long, 2 m.m. thick); gills adnexed, white. Spores 8-10  $\mu$  long. *Agaricus (Lepiota) echinodermatus*, Uke. & Mass. *Grev. xvi.*, 30.

On the ground, or on trunks. N.S.Wales. Queensland. New Caledonia.

e. **MESOMORPHI.** *Small, slender; stem fistulose; pileus dry; cuticle entire.*

**40. *Agaricus (Lepiota) mesomorphus.*** Bull. *Fr. Hym. Eur.* 38. *Cooke Illus. t. 85, B.*

Pileus rather fleshy, campanulate (2-3 c.m. broad), tawny; stem fistulose, short, thin (2-3 c.m. long), even and smooth as well as the pileus; ring erect, persistent; gills free, ventricose, white. Spores  $5-6 \times 3 \mu$ .

On the ground. Victoria.

**41. *Agaricus (Lepiota) rhyparophorus.*** Berk. & Br. *Ceylon Fungi* p. 500. *Sacc. Syll. No. 402.*

Small; pileus convex, somewhat umbonate sulcate-striate, white (2 c.m. broad), marked with brownish spots; stem clavate (2-3

c.m. long,  $1\frac{1}{2}$  m.m. thick), ring descending; gills narrow, attenuated behind, approaching the stem. Spores oblong,  $5\ \mu$  long.

On the ground. N.S. Wales.

**42. Agaricus (Lepiota) lavendulæ.** *Cooke & Mass. Grev.* xvi., 72. = *Ag. columbicolor*, *Cooke & Mass. Grev.* xvi., p. 30.

Pileus rather fleshy, convex, obtusely umbonate, furfuraceous, greyish-blue, or dove-colour ( $\frac{3}{4}$  in. diam.); stem cylindrical, equal, whitish, ochraceous below, thin, stuffed, then hollow, smooth (2 in. long, 2 lines thick). Spores elliptical,  $10-12 \times 5-6\ \mu$ .

On the ground. Victoria. (Fig. 3.)

**\*\* Epidermis viscid.**

**43. Agaricus (Lepiota) australius.** *Fr. Pl. Preiss* p. 131. *Sacc. Syll. No.* 258.

Large; pileus slightly fleshy, campanulate, then expanded, obtuse, smooth, *viscid*; stem long, clavate downwards; ring superior, fixed, torn; gills very remote from the stem, thin, crowded, dusky.

On sandy soil. W. Australia.

With the habit of *A. procerus*, but the pileus viscid.

*Species ignotis.*

**44. Agaricus (Lepiota) megalotheles.** *Kalch. in Syn. Queensl. Fl.*

*Nomen nuda.*

*Sub-Genus 4. SCHULZERIA, Bres.*

Hymenophore distinct from the stem, without volva or ring. Equal to *Lepiota* without a ring.

**45. Agaricus (Schulzeria) revocans.** *Cke. & Mass. Grev.* xviii., 2.

Pileus somewhat fleshy, convex, flattened ( $2-2\frac{1}{2}$  in. diam.), soft, pallid, spotted chiefly about the disc with darker scales; margin thin, stem sub-bulbous, erect, without ring, brownish below, whitish above, smooth, at length hollow ( $3 \times \frac{1}{4}$  in.); gills free, lanceolate, rather broad, white. Spores  $6 \times 4\ \mu$ .

In gardens. Queensland. (Fig. 4.)

*Sub-Genus 5. ARMILLARIA. Fr. S. M. i., p. 26.*

Veil partial, in infancy attaching the edge of pileus to the upper part of the stem, and often forming flocci on the pileus; pileus generally fleshy; stem confluent with the hymenophore, furnished with a ring; below the ring the veil is concrete with the stem, often forming scales upon it; gills broadly touching, or running down the stem.

\* *TRICHOLOMATA. Gills sinuate, adnexed, stem fleshy, similar.*

**46. Agaricus (Armillaria) robustus.** *Alb. & Schw. p. 147. Sacc. Syll. 265. Cooke Illus. t. 33.*

Pileus fleshy, compact, convexo-plane, unequal, smooth (10 c.m. broad), brown; stem solid, short, attenuated downwards, rooting.

fibrillose above the ring (7 c.m. long, 2 c.m. thick), white below; gills emarginate, reaching the stem. Spores  $6 \times 4 \mu$ .

In woods, etc. Victoria.

*var. subannulatus. Batsch. Consp., fig. 75.*

Smaller than in the typical form, with a smaller ring.—*Fr. Hym. Eur. p. 40.*

In woods, etc. Victoria.

**Agaricus (Armillaria) denigratus.** *Fries.*—See *Pholiota erebius*.

**\*\* CLITOCYBÆ.** *Gills attenuated behind, more or less decurrent, not sinuate, stem solid.*

**47. Agaricus (Armillaria) melleus.** *Vahl. Fr. Hym. Eur. 44. Cooke Illus. t. 32.*

Pileus fleshy, at length plane, honey colour, clothed with fibrous scales (5-10 c.m. broad), margin striate; stem spongy, stuffed, elastic, fibrillose (10-12 c.m. long, 12 m.m. thick); ring floccose patent; gills adnate, ending in a decurrent tooth, somewhat distant, pallid, then mealy with the profuse white spores, and spotted with reddish-brown. Spores  $8 \times 5 \mu$ .

On dead stumps. Edible. Victoria. Queensland. N.S.Wales.

Exceedingly variable, sometimes single, usually densely cæspitose.

**48. Agaricus (Armillaria) fulgens.** *Cke. & Mass. Grev. xviii., 2.*

Pileus convex, then plane ( $2\frac{1}{2}$ -3 in. diam.), bright golden yellow, even, smooth, shining; stem erect, slender (4-5 in. long,  $\frac{1}{3}$  in. thick), hollow, even, lemon-yellow; ring spreading, gills adnate, rather crowded, lemon yellow, spores globose, with an apiculus, 8-9  $\mu$  diam.

On sandy soil. Queensland.

*Sub-Genus 6. TRICHOLOMA, Fr.*

Veil obsolete, or attached in flocci or fibrils to the margin of the pileus. Stem fleshy. Gills sinuate behind.

\* *Pileus either viscid or clad with fibrils, scales, or down.*

a. **LIMACINI.** *Cuticle of the pileus viscid when moist, innate fibrillose or squamose, but not lacerated.*

\* *Gills not discoloured.*

**49. Agaricus (Tricholoma) resplendens.** *Fr. Hym. Eur. 49. Cooke Illus. t. 55.*

White, pileus fleshy, convex, then expanded (3 in. diam.), even, smooth, shining when dry, margin straight; stem solid, stout, smooth, or flocculose at the apex ( $\frac{1}{2}$  in. thick); gills free, then uncinat, adnexed, somewhat crowded, unspotted. Spores pip-shaped,  $7 \times 4 \mu$ .

In shady places. Queensland.

**50. Agaricus (Tricholoma) muculentus.** Berk. Hook.  
*Journ.*, 1845, p. 43.

Cæspitose, pileus convex, rather fleshy, glutinous, umbonate, smooth, whitish (1-1½ in. broad), stem nearly equal, solid, viscid (1-1½ in. high, 1½-2 lines thick), gills thin, distant, ventricose, rounded, attenuated into a tooth, remote from the stem, edge entire; spores subglobose, 5-6  $\mu$  diam.

Amongst moss. W. Australia.

**\*\* Gills becoming discoloured, usually with reddish spots.**

**51. Agaricus (Tricholoma) coarctatus.** Cke. & Mass.  
*Grev.* XVIII., 2.

Cæspitose, pressed together and deformed. Pileus fleshy, convex then plane, obtuse, viscid, tan coloured (1-3 in. diam.), when dry cracked; margin even; stem solid (1½ in. long, ⅓-½ in. thick), bulbous and rooting; gills rather crowded, broad, sinuately adnexed, ventricose, white, tinged with red. Spores elliptical, 6  $\times$  3  $\mu$ .

On sandy soil. Victoria. (Fig. 5.)

b. GENUINA. *Cuticle of the pileus never viscid, but lacerated in scaly flocci or in fibrils.*

**\* Gills not changing colour, nor spotted with red or black.**

**52. Agaricus (Tricholoma) rutilans.** Schæff. *Icon. t.* 219.  
*Cooke Illus. t.* 89. *Fr. Hym. Eur.* 53.

Pileus fleshy, campanulate, then expanded (2-4 in. broad), dry, variegated, as well as the somewhat hollow, soft, ventricose stem, with purplish down (2½-3½ in. high, ½ in. thick); gills rounded, crowded, yellow; edge thickened, villous, odour strong, taste bitter. Spores 7  $\times$  8  $\mu$ .

On pine stumps.

c. RIGIDA. *Cuticle of the pileus rigid, punctate-granulate, or in drying broken into smooth squamules.*

**53. Agaricus (Tricholoma) cuneifolius.** *Fr. Hym. Eur.* 61.  
*Cooke Illus. t.* 526.

Very brittle; pileus fuscous or livid, rather fleshy, convex, then plane, dry (1 in.), smooth, but soon cracked; stem hollow, attenuated downwards, white, pruinose above; gills thin, crowded, white, broad in front, obliquely truncate, attenuated behind, with a decurrent tooth.

In pastures. Victoria.

d. SERICELLA. *Pileus rather thin, at first silky, soon smooth and quite dry.*

**\* Gills broad, rather thick, and somewhat distant. Smell unpleasant.**

**54. Agaricus (Tricholoma) sulphureus.** Bull. *Champ. t.* 168. *Fr. Hym. Eur.* 63. *Cooke Illus. t.* 62.

Pileus fleshy, convex, then expanded (1-2 in. broad), rather umbonate, unequal, at first slightly silky, then smooth and even,

dirty yellow; stem stuffed, nearly equal, *slightly striate* (2 in. or more high, 4 lines thick); gills *distant*, arcuato-affixed, *sulphur-coloured* as well as the stem, odour disagreeable; spores  $7 \times 4 \mu$ .

In woods. W. Australia.

*\*\* Gills thin, crowded, narrow; small, inodorous.*

**55. Agaricus (Tricholoma) cerinus.** Pers. Syn. 321. Fries Hym. Eur. 64. Cooke Illus. t. 95, B.

Pileus fleshy, convexo-plane, brown or yellow, obtuse or depressed (3-4 c.m. broad), *becoming smooth*, even, stem stuffed, *fibrillose-striate*, base smooth (4-5 c.m. long); gills adnate, retreating, *crowded, yellow*.

On lawns, etc. Victoria.

*\*\* Gills becoming discoloured.*

**56. Agaricus (Tricholoma) civilis.** Fr. Hym. Eur. 71. Fries Icon. t. 42, f. 1.

Pileus fleshy, *soft*, convex, then plane, smooth, moist, ash-coloured, becoming pallid (8 c.m. broad); *cuticle separable*; stem solid, soft, fragile, fibrillose or squamulose, whitish (5-6 c.m. long,  $1-1\frac{1}{2}$  c.m. thick); gills deeply emarginate, crowded, white then yellowish, not spotted.

In pine woods. Victoria. Queensland.

**57. Agaricus (Tricholoma) nudus.** Bull. Champ t. 439. Fr. Hym. Eur. 79. Cooke Illus. t. 67.

Pileus fleshy, rather *thin*, convex then expanded and depressed (2 in. broad), obtuse, smooth, moist, changing colour; margin inflexed, thin, naked; stem stuffed, elastic, equal, rather mealy (2 in. high, 3-4 lines thick); gills rounded behind or slightly decurrent, crowded, narrow, *violet*, stained when old with *reddish-brown*; spores  $7-8 \times 3-4 \mu$ .

In woods, plantations, etc., amongst dead leaves. Esculent. Victoria. W. Australia. Tasmania.

e. HYGROPHANI. Pileus thin, regular umbonate, flesh at length soft, *hygrophanous*.

*\* Gills whitish, not spotted.*

**58. Agaricus (Tricholoma) melaleucus.** P. Fr. Hym. Eur. 74. Cooke Illus. t. 119.

Pileus fleshy, thin, *convex*, then expanded, *obsoletely umbonate* ( $1\frac{1}{2}$ -3 in. broad), smooth, moist, changing colour, dingy black, then livid brown, pale when dry; stem stuffed, thin, elastic, somewhat smooth, whitish, sprinkled with a few fibrils, thickened at the base (2-3 in. long, 2-3 lines thick); gills *emarginate*, *adnexed*, *ventricose*, crowded, white; spores  $10 \times 5 \mu$ .

On the ground. Victoria.

**59. Agaricus (Tricholoma) humilis.** *Fr. Hym. Eur.* 75.  
*Cooke Illus. t.* 99, 263a.

Pileus fleshy, soft, unibonate, then *convexo-plane* or depressed, even, smooth, hygrophanous (4.5 c.m. broad); margin thin, extending beyond the gills; stem stuffed, short, equal, fragile, *pallid*, *villosopulverulent* (3-4 c.m. long); gills rounded (with a decurrent tooth), crowded, ventricose, whitish; spores  $5 \times 4 \mu$ .

On the ground, amongst grass. Victoria.

**60. Agaricus (Tricholoma) persicinus.** *Fr. Hym. Eur.* 76.  
*Fr. Icon. t.* 42, f. 2.

Pileus fleshy, convex then flattened (1-3 in. diam.), *obtuse*, smooth, even, moist, hygrophanous, thin at the naked margin; stem stuffed, *cartilaginous*, fibrous within, equal, even, *smooth*; gills adnexed with a decurrent tooth, crowded, *arcuate*, thin, white.

In grassy places. Victoria.

**\*\* Gills becoming violet, grey, or smoky.**

**61. Agaricus (Tricholoma) putidus.** *Fr. Hym. Eur.* 77.  
*Cooke Illus. t.* 172.

Pileus somewhat fleshy, hemispherical (3-4 c.m. broad), *umbo-nate*, even, soft, hygrophanous, olive grey, hoary when dry; stem hollow, fragile, sub-compressed, *pruinose* ( $1\frac{1}{2}$  in. high, 3 lines thick); gills adnexed, ventricose, crowded, cinereous; odour mealy, rancid; spores  $8 \times 6 \mu$ .

In fir woods. Victoria.

*Sub-Genus.* 7. CLITOCYBE. *Fr. S. M. I., p.* 78.

Veil usually obsolete. Stem soon hollow. Gills adnate, attenuated behind, or decurrent.

**\* Pileus fleshy, often becoming pallid when dry, but not hygrophanous.**

**a. DISCIFORMES.** *Pileus convex, then plane or depressed, regular, obtuse; gills at first adnate or regularly adnate-decurrent.*

*Pileus cinereous or fuscous.*

**62. Agaricus (Clitocybe) curtipes.** *Fr. Hym. Eur.* 81.  
*Sacc. Syll.* 517. *Fr. Icon. t.* 18, f. 5.

Pileus rather fleshy, convex, then plane, obtuse, oblique, becoming smooth, brown, then pale, livid (2-3 c.m. broad). Stem solid, short, rigid, unequal, brown, thickened upwards, rather pruinose, becoming whitish ( $2\frac{1}{2}$ -3 c.m. long). Gills adnate, much crowded, white.

In grassy places. Tasmania.

*Pileus white, becoming shining.*

**63. Agaricus (Clitocybe) cerussatus.** *Fr. Hym. Eur.* 86.  
*Cooke Illus. t.* 121.

White. Pileus fleshy, convex, then expanded, obtuse, even, moist, soon smooth (7 c.m. broad); stem spongy, solid, tough,



elastic, naked (5 c.m. long); gills adnate, *very crowded*, thin, then decurrent, unchanged in colour.

In woods. Queensland. Victoria.

b. DIFFORMES. *Pileus fleshy in the disc, at first umbonate, then depressed, irregular, usually caespitose.*

**64. Agaricus (Clitocybe) fumosus.** *Pers. Ic. Pict. t. 7, f. 3, 4. Fr. Hym. Eur. 91. Cooke Illus. t. 175.*

*Sub-cartilaginous, rigid; pileus fleshy, convex, then expanded (7-10 c.m. broad), obtuse, even, naked, smoky, turning pale, cuticle adnate; stem stuffed, unequal, somewhat pruinose above (5-7 c.m. long, 1 c.m. or more thick); gills adnate, rather crowded, grey or whitish, as well as the stem.*

In woods and waste ground. Israelite Bay.

**65. Agaricus (Clitocybe) schizophyllus.** *Berk. Fl. Tasm. 11, 242. Sacc. Syll. 573.*

*Cæspitose, connate; pileus convex (25-30 m.m. broad); stem cartilaginous, fibrous, base tomentose, spongy; gills decurrent, at length splitting at the edge.*

On rotten wood. Tasmania.

c. INFUNDIBULIFORMES. *Pileus attenuated from the fleshy disc, at length infundibuliform, gills deeply decurrent.*

**66. Agaricus (Clitocybe) infundibuliformis.** *Schæff. Icon. t. 212. Fr. Hym. Eur. 93. Cooke Illus. t. 107.*

*Pileus fleshy, thin, at first convex, umbonate, clothed with minute innate silky down, at length funnel-shaped, flaccid, pale tan-colour (5-7 c.m. broad); stem stuffed, soft, elastic, thickened downwards (3-4 c.m. long, 5 m.m. thick); gills decurrent, moderately distant, white.*

On the sides of woods. Victoria.

**67. Agaricus (Clitocybe) myriophyllus.** *Cke. & Mass. Grev. xvi., 113.*

*Pileus fleshy, infundibuliform (1-1½ in. diam.), smooth, shining, tawny, grey or ochraceous, white, margin thin, incurved; stem equal, or attenuated downwards, solid, tawny at the base (1 in. long, 2 lines thick); gills very decurrent, linear, narrow, crowded, ochraceous, white. Spores 6 × 3 μ.*

On ground, amongst grass. Victoria. (Fig. 6.)

**68. Agaricus (Clitocybe) gilvus.** *Pers. Syn. p. 448. Fr. Hym. Eur. 95. Cooke Illus. t. 136.*

*Pileus fleshy, compact, convex, then depressed, obtuse, smooth, moist (5-7 c.m. broad), gilvous; stem fleshy, solid, stout, smooth (5 c.m. long, nearly 1 c.m. thick), nearly equal; gills decurrent very much crowded, thin, branched, and, as well as the flesh, pallid, then ochraceous.*

In pine woods. W. Australia.

**69. Agaricus (Clitocybe) subsplendens.** *Cke. & Mass. Greer. xviii., 2.*

Cespitose. Pileus somewhat fleshy, plane, then slightly infundibuliform (3-4 c.m. broad), smooth, *shining*, rufous or yellowish; stem solid, nearly of the same colour (3-5 c.m. long, 5 m.m. thick); gills adnate, slightly decurrent, paler than the pileus; spores sub-globose, 4-5  $\mu$  diam.

Amongst grass in garden. Queensland.

**70. Agaricus (Clitocybe) inversus.** *Scop. Carn. p. 445. Cooke Illus. t. 84.*

Pileus fleshy, fragile, convex, then infundibuliform, smooth (2 in. diam.), margin involute, even, brownish red at first, then tan-coloured; stem stuffed, then *hollow, rather rigid* (5 c.m. long, 5 m.m. thick), smooth; *flesh pallid*; gills decurrent, simple, pallid, then of the colour of the pileus; spores  $7 \times 4 \mu$ .

In fir woods. Victoria. Tasmania.

**71. Agaricus (Clitocybe) flaccidus.** *Fr. Hym. Eur. 97. Cooke Illus. t. 123.*

Pileus rather fleshy, *thin, flaccid, umbilicate, then funnel-shaped*, even, margin broadly reflexed (5-8 c.m. broad); stem stuffed, unequal, sub-flexuose, vilious at the base (4-5 c.m. long,  $\frac{1}{2}$ -1 c.m. thick); gills decurrent, crowded, arcuate, *yellowish*. Spores  $5 \times 4 \mu$ .

In fir woods. Victoria. S. Australia.

**72. Agaricus (Clitocybe) tuba.** *Fr. Hym. Eur. 99. Cooke Illus. t. 112.*

White, pileus fleshy, thin, convex, then plane, umbilicate, moist, *shining with a whitish silky lustre* (3-5 c.m. broad), margin even; stem equal, soon hollow and compressed, naked above (5 c.m. long, 2-4 m.m. thick), *gills attenuated and very decurrent, broad, much crowded*, white, growing pallid. Spores  $5 \times 4 \mu$ .

Amongst leaves. Victoria.

d. CYATHIFORMES. *Pileus fleshy, membranaceous, disc not compact, hygrophanous, depressed, then cup-shaped; gills adnate, then decurrent.*

**73. Agaricus (Clitocybe) expallens.** *Fr. Hym. Eur. 100. Cooke Illus. t. 220.*

Pileus between fleshy and membranaceous, flatly infundibuliform, even, smooth, becoming tawny, when dry clay-coloured, then whitish; *margin scarcely expanded*; stem stuffed, then hollow, equal, whitish, silky above; gills decurrent, rather distant, whitish grey.

On the ground. Victoria.

**74. Agaricus (Clitocybe) pruinosis.** *Lasch. in Fr. Hym. Eur. 101. Cooke Illus. t. 231.*

Pileus between fleshy and membranaceous, brownish or cinereous, umbilicate, then infundibuliform, rather even, hygrophanous *sprinkled with a greyish bloom* (1-2 in. diam), stem stuffed, some-

what ascending, *fibrillose*, pallid (1-2 in. long, 1-1½ lines thick), gills adnate, then decurrent, crowded, narrow, white, then dingy.

In pine woods and on trunks. Queensland.

e. **ORBIFORMES.** *Pileus hygrophaneus, convex, then flattened or depressed, gills plane, adnate. Pileus bright and self-coloured.*

**75. Agaricus (Clitocybe) laccatus.** *Scop. Carn. p. 444. Fr. Hym. Eur. 108. Cooke Illus. t. 139.*

Pileus membranaceous, red, brown or amethyst, convex, then depressed, and somewhat umbilicate, variable, hygrophaneous, *mealy* (2-5 c.m. broad), stem stuffed, equal, tough, fibrous (2-10 c.m. long, 5 m.m. thick), colour of the pileus; gills adnate, *thick, distant, brightly coloured*, at length mealy. Spores globose, echinulate, 8-9  $\mu$ . — *Laccaria laccatus, Berk. in Grer. xii., p. 70.*

In woods. Victoria. Queensland. N.S.Wales. Tasmania.

**76. Agaricus (Clitocybe) canaliculata.** *Cke. & Mass. Grev. xviii., p. 2.*

Pileus somewhat membranaceous (1 in. diam), at length umbilicate, velvety, with radiating channels, bright tawny; margin thin and crenulate; stem equal, longitudinally fibrillose, tough, at length fistulose, paler; gills adnate, broad, rather distant, flesh coloured, pruinose with white spores. Spores globose, verrucose, 9-10  $\mu$  diam.

Under *Casuarina* trees. Queensland.

**77. Agaricus (Clitocybe) laccatinus.** *Berk. Linn. Journ. xviii., p. 383. Sacc. Syll. 807.*

Cæspitose; pileus plano-convex, pallid fleshy red, smooth (1-1½ c.m.), margin sulcate; stem paler, fibrillose (1-2 c.m. long), gills thick, few of the same colour, adnate.

On dead wood. Queensland. New Zealand.

These three species of *Orbiformes* belong to Berkeley's proposed genus *Laccaria*.

#### *Sub-Genus. 8. COLLYBIA, Fr.*

Stem cartilaginous. Pileus not sulcato-plicate, nor wrinkled; margin at first involute. Gills free or only obtusely adnexed behind.

\* *Gills white or brightly coloured, not cinereous.*

a. **STRIÆPEDES.** *Stem stiff, hollow, or with a spongy pith, sulcate or striate.*

**78. Agaricus (Collybia) radicans.** *Relh. Fr. Hym. Eur. 109. Cooke Illus. t. 140.*

Pileus fleshy, thin, convex, then plane, gibbous, rugose, glutinous (6-8 c.m. broad); stems tufted, elongated, attenuated upwards, rigid, smooth, at length sulcate, with a long tapering rooting base

(12-20 c.m. long); gills adnexed, receding from the stem, distant, white. Spores  $8 \times 4 \mu$ .

On the ground. W. Australia. Victoria. Tasmania. Queensland.

*var. superbicus.* Berk. Hook. Journ., 1845.

Pileus ( $1\frac{1}{2}$ -3 in. broad), brown, stem (1-6 in. high,  $\frac{1}{4}$  in. thick), clad at the base with a velvety meal; gills adnate, yellowish, then orange when dry.

On the ground. W. Australia.

**79. Agaricus (Collybia) eradicatus.** Kalch. Grev. VIII., p. 151.

Resembling *A. radicans* in size and habit; stem erect, long, sulcate, but not rooting, nor thickened at the base (possibly an accidental variety).

On the ground. N.S. Wales. Victoria.

**80. Agaricus (Collybia) longipes.** Bull. Champ. t. 232. Fr. Hym. Eur. 110. Cooke Illus. t. 201.

Pileus fleshy, thin, conical, then expanded, umbonate, dry, slightly velvety (4-7 c.m. broad), brown; stem stuffed, tall, attenuated upwards, villose, at length sulcate (10-15 c.m. long); root long, fusiform; gills rounded behind, rather distant, white.

On old stumps, etc. Victoria.

**81. Agaricus (Collybia) fusipes.** Bull. Champ. t. 106. Fr. Hym. Eur. 111. Cooke Illus. t. 141.

Cæspitose, tough; pileus fleshy, convex, then plane, smooth, even, or rimose, dull vinous brown, umbo evanescent ( $1\frac{1}{2}$  in. or more broad); stem stuffed, then hollow, contorted, swollen, sulcate, fusiform and rooting (2-6 in. long,  $\frac{1}{2}$ -1 in. thick); gills adnexed, nearly free, at length separating behind, broad, distant, connected by veins, white, then colour of the pileus. Spores  $5 \times 4 \mu$ .

On stumps. Locality not indicated.

**82. Agaricus (Collybia) olivaceo-albus.** Cke. & Mass. Grev. xv., 93.

Pileus fleshy, thin, convex, then plane, at length depressed, smooth, slightly rugose, shining, dark sooty olive (2 in. across), margin even; stem nearly equal, smooth, whitish, stuffed, rigid, abruptly black below, rooting and attenuated (3 in. long, 5 m.m. thick); gills very broad (8 m.m.), adnexed, rather distant, plane, white; spores elliptic,  $14 \times 7 \mu$ .

On ground under *Casuarina*. Victoria. S. Australia.

*Gills crowded, narrow.*

**83. Agaricus (Collybia) butyraceus.** Bull. Champ. t. 572. Fr. Hym. Eur. 113. Cooke Illus. t. 143.

Pileus fleshy, convex, then expanded, umbonate (2-3 in.), even, smooth, moist, changing colour, flesh becoming white; stem stuffed,

externally cartilaginous, conical, striate; reddish brown (2-3 in. long, from  $\frac{1}{2}$ -1 in. thick at the base); gills nearly free, crowded, crenulate, white. Spores  $5 \times 3 \mu$ .

In woods. Victoria.

**84. Agaricus (Collybia) xylophilus.** *Weinm. in Linn. x., 54.*  
*Fr. Hym. Eur. 114. Cooke Illus. t. 202.*

Cæspitose. Pileus rather fleshy, campanulate, lax, then expanded (3 in. broad), broadly, gibbous, smooth, whitish, or clay-colour in the centre; stem hollow, equal, rather flexuous, fibrillose-striate, whitish (4-6 c.m. long, 3 m.m. thick), brownish within; gills adnate, narrow, much crowded, white. Spores minute,  $4 \times 3 \mu$ .

On stumps. Victoria.

b. VESTIPEDES. *Stem thin, equal, fistulose, or medullate, even, velvety, floccose or pruinose.*

*Gills broad, rather distant.*

**85. Agaricus (Collybia) velutipes.** *Curt. Flor. Lond. t. 70.*  
*Fr. Hym. Eur. 115. Cooke Illus. t. 184a.*

Cæspitose. Pileus fleshy, thin, convex, then plane, obtuse, smooth, viscid (3-6 c.m. broad, tawny yellow); stem stuffed, velvety, rooting, dark-bay; gills adnexed, distant, yellowish. Spores  $10 \times 5 \mu$ .

On logs and trunks of trees. Victoria.

**86. Agaricus (Collybia) lepidopus.** *Fr. Pl. Preiss. 131.*  
*Sacc. Syll. 831.*

Pileus rather fleshy; convex plane, even, smooth, orange; stem fistulose, equal, of the same colour, rough with scales; gills adnate, white.

On the ground. W. Australia.

**87. Agaricus (Collybia) morulus.** *Berk. Fl. Tasm. t. 181,*  
*f. 1. Sacc. Syll. 808.*

Purple red; pileus convex, fleshy (25 m.m. broad), stem equal, stuffed, horizontal, rough (1 c.m. long), gills plane, broad, adnate, distant. Spores  $5 \times 3 \mu$ .

On dead wood. Victoria. Tasmania.

**88. Agaricus (Collybia) tuberosus.** *Bull. Champ. t. 256.*  
*Fr. Hym. Eur. 119. Cooke Illus. t. 144a.*

White; pileus slightly fleshy, convex, then expanded ( $1-2\frac{1}{2}$  c.m. broad), umbonate, smooth, even; stem sub-fistulose, obsoletely pulverulent (3-5 c.m. long); root smooth, springing from a sclerotoid tuber, somewhat yellowish; gills adnate, crowded, slender, white. Spores  $3 \times 2 \mu$ .

On dead *Russula*, etc., and on the ground. Queensland.

c. *LÆVIPEDES*. *Stem thin, equal, fistulose, naked, smooth and conspicuously striate.*

**89. *Agaricus (Collybia) xanthopus.*** *Fr. Hym. Eur. 120.*  
*Cooke Illus. t. 203.*

Pileus rather fleshy, convex, then expanded (1.2 in.), *sub-umbonate*, even, smooth, becoming pale; stem fistulose, equal, yellow, even (3 in. high); *base equal, rooting, strigose*; gills truncate behind, free, broad, thin, lax, crowded, whitish.

About the stumps of trees. Victoria.

**90. *Agaricus (Collybia) nummularius.*** *Bull. Champ. t. 56.*  
*Fr. Hym. Eur. 120. Cooke Illus. t. 151b.*

Pileus rather fleshy, almost plane, *obsoletely depressed around the umbo*, even, pallid; stem stuffed, then hollow, smooth, pallid, incrassated above; gills free, rather distant, white.

Amongst leaves. Victoria.

**91. *Agaricus (Collybia) esculentus.*** *Jacq. Coll. II., t. 14, f. 4,*  
*Fr. Hym. Eur. 121. Cooke Illus. t. 152a.*

Pileus somewhat fleshy, nearly plane, obtuse, smooth (1.2 c.m. broad), stem *fistulose*, equal, tough, straight, rooting, *very smooth, clay-coloured* (4-6 c.m. long); gills adnate, lax, whitish. Spores  $4 \times 2 \mu$ .

In pastures. Esculent. Victoria.

**92. *Agaricus (Collybia) coagulatus.*** *Berk. & Br. Linn.*  
*Trans. II., p. 53. Sacc. Syll. 865.*

Cream colour; pileus hemispherical, rugosely striate (2 c.m. broad, 1 m.m. thick), yellow when dry; stem slender, cartilaginous, twisted, unequal, rather dilated at the base, yellow (5 c.m. high, 3 m.m. thick); gills few.

On the ground. Queensland.

**93. *Agaricus (Collybia) dryophilus.*** *Bull. Champ. t. 434.*  
*Fr. Hym. Eur. 122. Cooke Illus. t. 204.*

Pileus somewhat fleshy, nearly plane, *obtuse, rather depressed*, even, smooth, turning pale (1.2 in. diam.); stem fistulose, smooth, *reddish brown, or yellowish* (2.3 in. high,  $\frac{1}{4}$  in. thick); gills sinuate, adnexed, at length with a decurrent tooth, nearly free, crowded, narrow, white or pallid. Spores  $6 \times 4 \mu$ .

Amongst leaves in woods.

**94. *Agaricus (Collybia) veluticeps.*** *Cke. & Mass. Grer.*  
*XVI., 30.*

Pileus fleshy, convex, then expanded, velvety, liver coloured (1 in. broad), stem short, equal, pallid upwards, downwards rufous brown (1 in. long, 2 lines thick); flesh paler; gills ventricose, adnate, rather crowded, white. Spores  $8-10 \times 5 \mu$ .

In fern gully. Victoria.

**95. Agaricus (Collybia) nivosulus.** Berk. *Cuban Fungi* III.

Subcaespitose. Pileus convex, then flattened (2 c.m. broad), smooth, thin, whitish. Stem slender, smooth, even, solid, equal, or a little thickened upwards, white (3 c.m. long, 2 m.m. thick), with a copious rooting mycelium. Gills narrow, crowded, rounded behind, scarcely touching the stem, white. Spores minute,  $3 \times 2 \mu$ .

On logs. Victoria.

**\*\* Gills becoming cinereous.**

d. **TEPHROPHANÆ.** Colour dingy, becoming cinereous.

Gills crowded, rather narrow.

**96. Agaricus (Collybia) rancidus.** Fr. *Hym. Eur.* 125.

*Cooke Illus. t. 153a.*

Strong scented. Pileus rather fleshy, convex, then plane, umbonate, even, tough, grey, whitish, silky ( $2\frac{1}{2}$ -5 c.m. broad); stem fistulose, straight, rigid, rooting, smooth (6-8 c.m. long); gills free, crowded, narrow, cinereous. Spores  $7 \times 4 \mu$ .

Under trees. Victoria.

**97. Agaricus (Collybia) ozes.** Fr. *Hym. Eur.* 125.

Strong scented. Pileus rather fleshy, campanulate, then plane (1 in. or more broad), umbonate, naked, smooth, hygrophane, margin striate, stem medullate, then fistulose, finely striate, slender, fragile, somewhat flexuous ( $2\frac{1}{2}$ -4 in. long, 1 line thick), apex mealy; gills adfixed, crowded, cinereous, then sooty-olive.

On pine leaves.

var. **crassipes.** C. & M. *Grev.* xv., 93.

Pileus conical-campanulate (1 in. high and broad), obtuse, thin, striate, stem a little attenuated upwards (3 in. long, 1 c.m. diam.), faintly striate, umber, hollow, gills pallid, tawny.

On low, damp ground. S. Australia.

**98. Agaricus (Collybia) plexipes.** Fr. *Hym. Eur.* 126.

*Cooke Illus. t. 154 b.*

Inodorous. Pileus submembranaceous, campanulate, subrugose, somewhat striate, smooth, grey (1-2 c.m. broad); stem fistulose, equal, tough, silky-fibrous with entangled fibres, base abruptly rooting; gills free, rather crowded, white, becoming glaucous.

On trunks. Victoria.

Gills very broad, more or less distant.

**99. Agaricus (Collybia) laceratus.** Lasch. in Fr. *Hym.*

*Eur.* 127. *Cooke Illus. t. 269.*

Pileus between fleshy and membranaceous ( $1\frac{1}{2}$  in. broad), campanulate, rather blunt, moist, streaked with brown; stem stuffed, then hollow, firm, twisted, fibroso-striate, floccoso-pruinose

above, at length compressed (2-4 in. long); gills adnexed, distant, broad, thick, greyish-white. Spores globose 6-7  $\mu$ .

In pine woods. Victoria.

**100. Agaricus (Collybia) tylicolor.** *Fr. Hym. Eur.* 129.  
*Cooke Illus. t.* 247a.

Pileus rather fleshy, convex, then plane, somewhat umbonate, even, smooth, cinereous ( $\frac{1}{2}$  in. diam.); stem fistulose, equal, even, pulverulent (1 in. long); gills free, distant, plane, greyish.

In woods. Victoria.

*Sub-Genus* 9. MYCENA. *Fr. S. M.* i., p. 140.

Pileus more or less membranaceous, generally striate, margin always straight, at first pressed to the stem, campanulate, and generally umbonate; stem externally cartilaginous, tubular, confluent with the hymenophore; gills never decurrent, though some species have a broad sinus near the stem.

a. CALODONTES. *Edge of the gills dark, denticulate.*

**101. Agaricus (Mycena) rosellus.** *Fr. Hym. Eur.* 132.  
*Cooke Illus. t.* 131a. *Sacc. Syll. v.*, 941.

Rose-coloured. Pileus membranaceous, hemispherical, obtusely umbonate, striate (4-5 m.m. broad); stem thin, soft, without juice, whitish fibrillose at the base; gills adnate, with the edge darker. Spores 6-8  $\times$  4  $\mu$ .

Amongst fir leaves. Victoria.

b. ADONIDEÆ. *Gills entirely of one colour. Pileus pure coloured, bright, not brownish or greyish. Growing on the ground.*

**102. Agaricus (Mycena) purus.** *Pers. Syn.* 339. *Fr. Hym. Eur.* 132. *Cooke Illus. t.* 157.

Strong scented. Pileus rather fleshy, campanulate, then expanded, obtusely unbonate, smooth, turning pallid; margin striate (1-2 in. broad); stem rigid, even, nearly naked, villous at the base; gills very broad, widely sinuate adnexed, connected by veins, paler than the pileus.

On the ground in woods. Victoria.

**103. Agaricus (Mycena) silenus.** *Berk. & Br. Linn. Journ.* xi., 524. *Sacc. Syll.* 983.

Small. Pileus campanulate, striate, red, fleshy (6 m.m. broad, vinous brown), with a minute papillate umbo; stem short, fistulose, paler (12 m.m. long, 2 m.m. thick); gills ventricose, shortly adnate, deep red.

On dead wood. Queensland.

**104. Agaricus (Mycena) flavovirens.** *Cke. & Mass. Grev.* xix., 45.

Pileus membranaceous, obtusely campanulate ( $\frac{1}{2}$  to 1 c.m. broad and high), yellowish green, faintly striate when moist, smooth;



stem slender, erect, smooth, even, fistulose, paler than the pileus (2-2½ c.m. long, scarcely 1 m.m. thick); gills broadly adnate, not crowded, plane, lemon yellow. Spores minute, 5-6 × 3 μ, white.

On tree ferns. Victoria.

c. RIGIDIPEDES. *Stem rigid, somewhat rooting, usually growing on wood, often caespitose.*

**105. Agaricus (Mycena) galericulatus.** Scop. Carn. 455.  
*Cooke Illus. t. 222. Sacc. Syll. v., 1002.*

Pileus submembranaceous, conico-campanulate, then expanded (2-6 c.m. broad), striate to the umbo, dry, smooth; stem rigid, polished, even, smooth, base rooting, fusiform; gills adnate, with a decurrent tooth, connected by veins, whitish, or flesh-coloured. Spores 9-10 × 4-6 μ.

On trunks of trees. Victoria. Tasmania.

**106. Agaricus (Mycena) trachycephalus.** M. & Kalch.  
*Grev. VIII., 151, t. 142, f. 1. Sacc. Syll. v. 1025.*

Cæspitose. Pileus membranaceous, globosely campanulate, papillate, plicate, cinereous, brown (7 m.m. high and broad); stem paler, filiform (2½-5 c.m. long), white, villose and coalescing at the base; gills rather distant, narrow, ascending, yellowish.

On rotten trunks. Victoria.

d. FRAGILIPEDES. *Stem fragile, gills becoming discoloured. Usually strong scented.*

**107. Agaricus (Mycena) atro-cyaneus.** Batsch. Elen.,  
*fig. 87. Fr. Hym. Eur. 141. Cooke Illus. t. 236b. Sacc.*  
*Syll. v., 1037.*

Fragile, inodorous; pileus membranaceous, campanulate, then convex, sulcate (6-11 m.m. broad), brownish, then grey, becoming bluish, covered with an *evanescent white powder*; umbo irregular, obtuse; stem straight, filiform, dark-blue (2-5 c.m. long), base villose, somewhat bulbous; gills attenuated, adnexed, lanceolate, distant, whitish. Spores 8-9 μ long.

On the ground. Tasmania.

**108. Agaricus (Mycena) leptcephalus.** Pers. Ic. et Desc. t.  
12, f. 4. Fr. Hym. Eur. 141. Cooke Illus. t. 187a.

Fragile, with a *nitrous odour*. Pileus rather membranaceous, campanulate, then expanded, repand, umbonate, sulcate, pruinose, opaque; stem equal, striate, opaque, dry; gills emarginate, whitish grey.

On trunks and the ground. Victoria.

**109. Agaricus (Mycena) aëtites.** Fr. Ic. t. 81, f. 5.  
*Cooke Illus. t. 188a. Sacc. Syll. v., 1050.*

Fragile; pileus membranaceous, campanulate, then convex, smooth, sulcate, hygrophanous, with a broad obtuse prominent umbo; brownish, growing pale; stem unequal, somewhat com-

pressed, smooth, shining (6 c.m. long), whitish ; gills uncinatè, subarcuatè, *thin*, connected by veins, whitish. Spores  $10 \times 6 \mu$ .

Amongst mosses. Victoria.

e. FILIPEDES. *Stem threadlike, rooting ; gills paler at the edge.*

**110. Agaricus (Mycena) filipes.** *Bull. Fries. Sacc. Syll.* v., 1064.

var. **acutatus.** *Kalch. Linn. Soc., N.S.W.*, 1882, p. 104.

Differs from the type in the pileus being dark, cinereus, and acutely conical (3 lines high, 2 lines diam.). Stem filiform (4-5 inches long), pallid, flaccid, smooth, rooting, base pilose ; gills free, lanceolate, crowded, white.

On the ground. N.S.Wales.

**111. Agaricus (Mycena) debilis.** *Fr. Hym. Eur.* 145. *Cooke Illus. t.* 189a. *Sacc. Syll.* v., 1071.

Tender. Pileus membranaceous, campanulate, convex, obtuse, striate, becoming even when dry, rugulose, *brownish*, opaque ; stem filiform, capillary, lax, flaccid, fibrillose at the base ; gills broadly adnate, distinct, whitish. Spores  $9-10 \times 6-7 \mu$ .

In woods. N.S.Wales. Victoria.

**112. Agaricus (Mycena) speireus.** *Fr. Hym. Eur.* 147. *Cooke Illus. t.* 190a. *Sacc. Syll.* v., 1080.

Pileus membranaceous, conico-convex, then plane, unpolished, striate (4-6 m.m. broad) greyish-brown ; *disc darker, at length depressed* ; stem filiform, tough, shining, fibrillose, rooting (5 c.m. long, 1 m.m. thick) ; gills *plane, then decurrent*, distant, white.

On mossy trunks. N.S.Wales. Victoria.

**113. Agaricus (Mycena) crinalis.** *Berk. Hook. Journ.* (1846), p. 44.

Very delicate. Pileus hemispherical, membranaceous ( $\frac{1}{2}$ -1 line across), striate, white ; stem threadlike (1 inch long), flexuous, yellowish brown, mealy ; gills few, arcuate, decurrent.

On decayed wood. W. Australia.

**114. Agaricus (Mycena) tuberigena.** *Berk. Linn. Journ.* xiii., 156.

Rather tender and small, white. Pileus convex, smooth, striate (1 line across) ; stem threadlike ( $1\frac{1}{2}$  in. high), slender, rising from an elongated pallid, then blackish sclerotium ; gills shortly adnate.

On the ground. Victoria.

f. LACTIPEDES. *Containing a milky juice which is usually coloured.*

**115. Agaricus (Mycena) hæmatopus.** *Pers. Obs.* II., p. 56. *Cooke Illus. t.* 162a. *Sacc. Syll.* v., 1097.

Cæspitose ; pileus fleshy, campanulate, obtuse, smooth, margin denticulate ( $1\frac{1}{2}$ -2 c.m. broad) ; stem rigid, pulverulent, *yielding a*

*dark-red juice* (3-6 c.m. long); gills adnate, white. Spores  $10 \times 6-7 \mu$ .

On old dead trunks. Victoria.

**116. *Agaricus (Mycena) sanguinolentus.*** *A. & S. Consp.* p. 896. *Fr. Icon.* t. 80, f. 3. *Cooke Illus.* t. 163a.

Pileus membranaceous, campanulate or convex, striate (4-11 m.m. broad); stem flaccid, smooth (6-11 c.m. long), yielding a *pale red juice*; gills affixed, reddish, with a *dark purplish edge*. Spores  $8-9 \times 6-7 \mu$ .

Amongst leaves in woods. Victoria.

g. BASIPEDES. *Stem dry, attached by a discoid or bulbous base.*

**117. *Agaricus (Mycena) stylobates.*** *Pers. Syn.* t. 5, f. 4. *Fr. Hym. Eur.* 150. *Cooke Illus.* t. 249a. *Sacc.*

*Syll.* v., 1124.

Pileus white, membranaceous, campanulate, obtuse, striate, sub-pilose (4-7 m.m. broad); stem filiform, smooth ( $2\frac{1}{2}$ -6 c.m. long); base orbicular, plane, villous, striate, *gills free, distinct, ventricose*. Spores  $4 \times 3 \mu$ .

On fern, twigs, etc. Victoria. Queensland.

**118. *Agaricus (Mycena) tenerrimus.*** *Berk. Outl.* t. 6, f. 6. *Sacc. Syll.* v., 1129. *Cooke Illus.* t. 249b.

Gregarious, white, very delicate; pileus convex, pruinose with minute *furfuraceous granules* (2-4 m.m. broad); stem pilose ( $2\frac{1}{2}$  c.m. long, 1 m.m. thick), adhering by a minute pubescent disc; *gills free, ventricose*; spores  $4 \mu$  long.

On fir-cones, sticks, etc. Queensland. N.E. Australia.

**119. *Agaricus (Mycena) interruptus.*** *Berk. Fl. Tasm.* t. 151, f. 2. *Sacc. Syll.* 1135.

Pileus rather thick, plane, then depressed, livid, covered with a cartilaginous pellicle (3-4 m.m. broad); stem arising from an orbicular flattened striate base (3 m.m. to 1 c.m. long); gills crenulate, white, descending interruptedly into the flesh of the gelatinously fleshy pileus.

On bark. Tasmania.

h. INSITITIÆ. *Small, abrupt at the base, gills adnate.*

**120. *Agaricus (Mycena) corticola.*** *Schum. Fr. Hym. Eur.* 152. *Fr. Icon.* t. 85, f. 2. *Cooke Illus.* t. 164, f. A. *Sacc.*

*Syll.* v., 1147.

Pileus thin, hemispherical, at length obsoletely umbilicate, sulcato-striate (2-7 m.m. broad); stem slender, short, *incurved, furfuraceous*; gills broadly adnate, uncinata, *broad, rather ovate, pallid*; spores sphaeroid,  $6-8 \mu$  diam.

On mossy bark. N.S. Wales. Queensland. Victoria.

**121. *Agaricus (Mycena) subcorticalis.*** *Oke. & Mass. Grev.*  
xv., 93.

Pileus thin, convex, then flattened, smooth, even, lilac ( $\frac{1}{2}$ – $\frac{3}{4}$  in.), disc brick red; stem ascending, thin, equal, fistulose, smooth (1 in. or more long, 2 m.m. thick); gills adnate, ventricose, rather crowded, pale lilac; spores ovate,  $5 \times 4 \mu$ .

On log of *Banksia*. S. Australia.

**122. *Agaricus (Mycena) hiemalis.*** *Osbeck in Retz. Supp.*  
19. *Fr. Hym. Eur.* 153. *Cooke Illus. t.* 164b.

Pileus thin, campanulate, obsoletely umbonate, margin striate; stem slender, ascending, downy below; gills adnate, narrow, linear, whitish; spores  $6-7 \times 2-3 \mu$ .

On the trunks of trees. Victoria.

**123. *Agaricus (Mycena) capillaris.*** *Schum. Saell. No.*  
16761. *Sacc. Syll. v.*, 1152. *Fr. Hym. Eur.* 153. *Cooke*  
*Illus. t.* 193b.

Very delicate, white; pileus campanulate, at length umbilicate (1-2 m.m. broad), smooth; stem thread-like, smooth ( $2\frac{1}{2}$  c.m. long); gills adnate, ascending, rather distant; spores ovate,  $6-8 \times 4 \mu$ .

On dead leaves in woods. Victoria. Tasmania.

**124. *Agaricus (Mycena) juncicola.*** *Fr. Hym. Eur.* 154.  
*Sacc. Syll. v.*, 1154. *Cooke Illus. t.* 193c.

Very delicate: pileus convex, striate, smooth, rufescent (2 m.m. broad); stem threadlike ( $2\frac{1}{2}$  c.m. long), smooth, brownish; gills adnate, distant, white.

On dead rushes, in bogs. Victoria.

*Sub-Genus* 10. **OMPHALIA.** *Fr. Epicr. p.* 119.

Pileus generally from the first umbilicate, afterwards funnel-shaped, almost always membranaceous or sub-membranaceous and hygrophanous, margin incurved or straight; stem cartilaginous and tubular, when young often stuffed, confluent with the hymenophore, but heterogenous from it; gills truly and considerably decurrent.

**A. COLLYBIARII.** *Pileus from the first dilated. Margin turned in.*

*a. HYDROGRAMMI.* *Gills narrow, very crowded.*

**125. *Agaricus (Omphalia) hydrogrammus.*** *Fr. Hym. Eur.*  
154. *Fr. Icon. t.* 71. *Cooke Illus. t.* 239. *Sacc. Syll. v.*, 1179.

Pileus rather membranaceous, umbilicate, flaccid, smooth, livid, hygrophanous; margin spreading, striate, somewhat undulate (6 c.m. broad or more). Stem hollow, smooth, rather compressed, rooting (6-8 c.m. long), base clad with whitish hairs; gills decurrent, much crowded, whitish.

On dead leaves. N.S. Wales. Victoria.

- 126. Agaricus (Omphalia) dumosus.** *Fr. Hym. Eur.* 155.  
*Fr. Icon. t. 72, f. 1. Sacc. Syll. v., 1181.*

Pileus rather membranaceous, convex, then plane, slightly umbilicate, rigid, brick-red ( $2\frac{1}{2}$ -5 c.m. broad), striate about the margin; stem fistulose, smooth, of the same colour (5-8 c.m. long, brown at the base); gills slightly decurrent, crowded, pallid.

In woods. Victoria.

b. PYXIDATI. *Gills slightly distant, narrow.*

- 127. Agaricus (Omphalia) pyxidatus.** *Bull. t. 568, f. 2.*  
*Fr. Hym. Eur. 157. Cooke Illus. t. 194, f. 2. Sacc. Syll.*  
*v., 1199.*

Pileus submembranaceous, umbilicate, then funnel-shaped, smooth, hygrophanous (1-2 c.m. broad); margin striate, brick-red; stem stuffed, then hollow, even (3 c.m. long); gills decurrent, rather distant, narrow, reddish-grey; spores 7-8  $\times$  5-6  $\mu$ .

Amongst short grass, on lawns, etc. S. Australia. Victoria.

- 128. Agaricus (Omphalia) holochlorus.** *B. & Br. Linn. Journ. xi., 525.*

Pileus membranaceous, convex, then rather infundibuliform ( $2\frac{1}{2}$  c.m. broad), yellow-brown, flocculose, striate; stem dilated, fistulose (18 m.m. long); gills decurrent, lemon-yellow.

On dead wood.

- 129. Agaricus (Omphalia) epichysium.** *Pers. Ic. Pict. t. 13, f. 1. Fr. Hym. Eur. 158. Sacc. Syll. 1206.*

Soft; pileus membranaceous, rather plane, umbilicate, striate when moist, sooty, cinereous, pallid when dry, silky or floccosely scaly (1-3 c.m. broad); stem somewhat fistulose, smooth, cinereous ( $2\frac{1}{2}$  c.m. or more long); gills shortly plano-decurrent, whitish cinereous; spores ellipsoid, 8-10  $\times$  4-5  $\mu$ .

On rotten wood. Tasmania.

- 130. Agaricus (Omphalia) oniscus.** *Fr. Hym. Eur. 158.*  
*Fr. Icon. t. 76, f. 3. Cooke Illus. t. 209, f. 1.*

Pileus submembranaceous, convex, then plane or depressed, remotely radiate, striate, flaccid, smooth, even, hygrophanous (scarcely 1 inch), dark cinereous; stem subfistulose, firm, equal; gills adnate, decurrent, straight, somewhat distant, livid, or whitish, as well as the stem.

In swampy ground. Queensland.

- 131. Agaricus (Omphalia) pumilio.** *Kalch. Grev. VIII., 151, t. 142, f. 2. Sacc. Syll. 1215.*

Pileus membranaceous, convex, umbilicate, radiately striate, smooth, fawn-coloured (3-4 lines broad); stem fistulose, thin, rather short, curved (3-5 lines long); gills decurrent, narrow, rather crowded, paler than the pileus.

On wood. N.S. Wales.

- 132. *Agaricus (Omphalia) scyphiformis.*** *Fr. Hym. Eur.* 159. *Fr. Icon. t.* 75, *f.* 3.

White. Pileus membranaceous, convex, then infundibuliform, smooth (12-18 m.m. broad); margin faintly striate, even when dry; stem rather fistulose, thin, short, smooth (2-4 c.m. long); gills decurrent, thin.

On naked ground. Queensland. Victoria.

- 133. *Agaricus (Omphalia) glaucescens.*** *Kalch. Linn. Soc. N.S.W.* 1882, *p.* 105.

Small. Pileus infundibuliform; margin a little reflexed (2-3 line diam.), grey sage-green; stem filiform, lax ( $\frac{1}{2}$ -1 in. long), greenish yellow; gills decurrent, narrow, rather crowded, of the same colour.

On the ground. N.S. Wales.

c. UMBELLIFERI. *Gills very distant, broad, triangular, usually thick.*

- 134. *Agaricus (Omphalia) muralis.*** *Sow. Fungi t.* 322. *Fr. Hym. Eur.* 160. *Cooke Illus. t.* 250, *f.* 3. *Sacc. Syll.* v., 1239.

Pileus submembranaceous, umbilicate, *radiato-striate*, smooth (1-3 c.m. broad), margin crenulate; stem somewhat *stuffed*, short, tough, brownish, rufous ( $\frac{1}{2}$ -1 $\frac{1}{2}$  c.m. long,  $\frac{1}{2}$ -1 m.m. thick); gills decurrent, distant, paler. Spores  $10 \times 5 \mu$ .

On the ground, banks and walls. Victoria.

- 135. *Agaricus (Omphalia) umbelliferus.*** *Linn. Suec., No.* 1192. *Fr. Hym. Eur.* 160. *Cooke Illus. t.* 271. *Sacc. Syll.* v., 1241.

Pileus between fleshy and membranaceous, variable in colour, convexo-plane, obconic, brittle, *radiato-striate*, when dry becoming *pallid, even, silky* (1-3 c.m. broad); margin at first inflexed, crenate; stem subfistulose, equal, base downy; gills decurrent, very distant, broad behind. Spores  $7 \times 4 \mu$ .

In swamps, exposed pastures, etc. W. Australia. Victoria. Tasmania.

- 136. *Agaricus (Omphalia) carneo-rufulus.*** *Berk. Fl. Tasm. t.* 181, *f.* 3. *Sacc. Syll.* 1247.

Pileus plane, rather fleshy, striate, rufous (12-14 m.m. diam.); stem ascending, flexuous, stuffed (2 c.m. long, 1 $\frac{1}{2}$  m.m. thick); gills decurrent, pale, rufous.

On rotten wood. Tasmania.

- 137. *Agaricus (Omphalia) flavo-croceus.*** *Berk. Fl. Tasm.* II., 244. *Sacc. Syll.* 1265.

Pileus convex, umbilicate (1 c.m. diam.), smooth, yellow; stem elongated, unequal, solid, of the same colour (4-5 c.m. long); gills broad, decurrent behind, saffron yellow.

On branches. Tasmania.

- 138. *Agaricus (Omphalia) umbratilis.*** *Fr. Hym. Eur.* 164.  
*Cooke Illus. t.* 274, *f.* 1. *Sacc. Syll. v.,* 1279.

Pileus somewhat membranaceous, campanulate, then convex (1 in. broad), at length umbilicate, smooth, *umber-brown*, hygrophanous; margin finely striate; *stem stuffed*, tough, smooth (1-2 in. long); gills adnate, decurrent, broad, crowded, becoming brownish. Spores  $6-7 \times 4-5 \mu$ .

In damp places. Victoria.

- 139. *Agaricus (Omphalia) setipes.*** *Fr. Hym. Eur.* 164.  
*Bull. Champ. t.* 560, *f.* 2. *Sacc. Syll. v.,* 1282.

Pileus membranaceous, conical, then convex, rather papillate, everywhere striate, brownish grey (6-9 m.m. broad); stem filiform, straight, pubescent at the base (8 c.m. long or more); gills very decurrent, rather distant, connected by veins, whitish grey. Spores  $6-7 \times 2-3 \mu$ .

In shady places. Victoria. N.S.Wales.

- 140. *Agaricus (Omphalia) fibula.*** *Bull. Champ. t.* 186, *t.* 550, *f.* 1. *Fr. Hym. Eur.* 164. *Cooke Illus. t.* 274. *Sacc. Syll. v.,* 1283.

Pileus membranaceous, turbinate, expanded (12-13 m.m. broad), then *somewhat umbilicate*, striate, becoming pale, dry, even; stem slender (3-4 c.m. long), nearly *orange colour*, as well as the pileus; gills strongly decurrent, distinct, paler. Spores  $3\frac{1}{2}-5 \times 2 \mu$ .

Among moss. Queensland. W. Australia. S. Australia.

- 141. *Agaricus (Omphalia) gomphomorphus.*** *Berk. Linn. Journ. xviii.,* 383. *Sacc. Syll.* 1286.

Lurid, club-shaped; pileus umbilicate (8 m.m. broad); stem thickened upwards, fibrillose, rufous, springing from a white fibrillose mycelium (6 m.m. long, 2 m.m. thick, paler than the pileus); gills narrow.

On the ground in tufts. Queensland.

- 142. *Agaricus (Omphalia) gracillimus.*** *Weinm. Fr. Hym. Eur.* 165. *Fr. Icon. t.* 75, *f.* 6. *Cooke Illus. t.* 252, *f.* 1.  
*Sacc. Syll. v.,* 1289.

*Snow-white*; pileus membranaceous, hemispherical, *subflocculose*, *sulcate* (4-7 m.m. broad); stem filiform, slender, floccose at the base (13 m.m. long); gills decurrent, thin, alternately subdimidiate; spores  $6-7 \times 3 \mu$ .

In marshy ground. Victoria.

d INTEGRELLI. *Gills fold-like, narrow.*

- 143. *Agaricus (Omphalia) integrellus.*** *Pers. Ic. & Des. t.* 13, *f.* 5. *Fr. Hym. Eur.* 165. *Cooke Illus. t.* 252, *f.* 3.  
*Sacc. Syll. v.,* 1313.

Gregarious, *white*, fragile; pileus membranaceous, *hemispherical*, then expanded (4-9 m.m. broad), pellucid, striate; stem very

slender, short ( $2\frac{1}{2}$  c.m. long), pubescent below; gills decurrent, distant, equal, fold-like, slightly branched, edge acute; spores  $6-7 \times 4 \mu$ .

On decayed sticks. Tasmania.

**144. Agaricus (Omphalia) Mullerianus.** *Berk. in Herb.*

Pileus convex, umbilicate (1 c.m. broad), tawny, smooth; stem elongated, straight, equal, smooth, or longitudinally striate (when dry), of the same colour (5-6 c.m. long, 1 m.m. thick); gills decurrent, rather broad, distant, whitish.

On the ground. Victoria.

*Sub-Genus 11. PLEUROTUS. Fr. Epicr. p. 129.*

Veil evanescent, or none; pileus fleshy; stem excentric, lateral or wanting; gills with a sinus or broadly decurrent tooth.

a. **EXCENTRICI.** *Pileus entire, laterally extended, excentric, not truly lateral; growing on wood.*

*Veil annulate.*

**145. Agaricus (Pleurotus) corticatus.** *Fr. Hym. Eur. 166. Sacc. Syll. 1322. Cooke Illus. t. 290.*

Pileus compact, excentric, villous, at length *floccoso-squamulose* (7 in. broad); stem firm, fibrillose (3 in. long,  $1\frac{1}{2}$  in. thick); veil membranaceous, torn; gills decurrent, subdistant, *anastomosing behind*; spores  $12 \times 5 \mu$ .

On trunks. Queensland.

**146. Agaricus (Pleurotus) tephrophanus.** *Berk. Fl. Tasm. II., 224. Sacc. Syll. v., 343.*

Pileus excentric, infundibuliform, brown, rivulose, pulverulent; stem hairy, arising from a strigose base; gills broad, emarginate behind.

On burnt wood. Tasmania.

**147. Agaricus (Pleurotus) abbreviatus.** *Kalch. Grev. VIII., 152, t. 142, f. 7. Sacc. Syll. 1346.*

Wholly rufous. Pileus excentric (2-3 lines broad), convex then plane, margin turned in, even, smooth; stem shorter than the diameter of the pileus, a little thickened above or below (2 lines long, 1 line thick); gills plane, adnate, narrow, crowded.

On wood. New South Wales.

**148. Agaricus (Pleurotus) læticolor.** *Kalch. Grev. VIII., 151, t. 142, f. 4. Sacc. Syll. 1347.*

Pileus rather fleshy, excentric, convex, very obtuse, margin turned in, even, smooth ( $1-1\frac{1}{4}$  c.m. broad), golden yellow; stem stuffed, equal, naked (1 c.m. long, 1 m.m. thick); gills emarginate, adnate, crowded, ventricose, flesh colour (colour of spores unknown).

On wood (?). N.S.Wales.



- 149. *Agaricus (Pleurotus) Gardneri.*** *Berk. Hook. Journ.*  
1840, p. 427. *Sacc. Syll.* 1369.

Pileus between fleshy and leathery, rather infundibuliform, smooth, yellow ( $2\frac{1}{2}$  in. diam.) ; gills very decurrent, paler ; stem short, leathery, smooth, becoming grey (1 in. long,  $\frac{1}{4}$  in. thick). Phosphorescent.

On petioles and half putrid fronds of palms. Queensland.

- 150. *Agaricus (Pleurotus) illuminans.*** *Müll. Linn. Journ.*  
XIII., 157. *Sacc. Syll.* 1370.

Phosphorescent. Pileus smooth, tawny (2 in. diam.), stem thick ; gills broad, thick, decurrent.

On dead wood. Victoria. N.S.Wales. Queensland.

- 151. *Agaricus (Pleurotus) luteo-aurantius.*** *Kalch. Grev.*  
VIII., p. 151, t. 142, f. 5. *Sacc. Syll.* 1386.

Pileus rather fleshy, orbicular, convex, obtuse, even, naked, orange-yellow (1 c.m. broad) ; stem fistulose, thin, short, tough, curved upwards, even, pulverulent, rufous, clad with mealy white flocci (1-2 c.m. long, 1 m.m. thick) at the swollen base ; gills adnate, decurrent, scarcely crowded, rather broad, gillvous (colour of spores uncertain).

On wood. N.S.Wales.

*Veil none ; gills very decurrent. Pileus lateral, sessile or extended behind into a stem-like, short oblique base.*

- 152. *Agaricus (Pleurotus) ostreatus.*** *Jacq. Austr. t.* 288.  
*Fr. Hym. Eur.* 173. *Cooke Illus. t.* 195.

Pileus soft, fleshy, sub-dimidiolate, *conchate*, ascending, growing pale ; stem abbreviated (or obsolete), firm, elastic, strigose at the base ; gills decurrent, rather distant, anastomosing behind, whitish. Spores  $10-11 \times 4 \mu$ .

On trees. Esculent. Victoria. N.S.Wales.

- 153. *Agaricus (Pleurotus) polyphemus.*** *C. & M. Grev.*  
xvi., 72.—*Agaricus polychromus*, *Cke. & Mass. Grev.* xvi., 31.

Pileus fleshy, infundibuliform, ochraceous white, at length sulphur coloured, spotted with purple or sooty spots, smooth, even (3-4 in. diam.) ; stem rather excentric, solid, short, attenuated below, whitish (1 in. long,  $\frac{1}{2}$  in. thick) ; gills decurrent, rather crowded, arcuate, attenuated at each end, narrow, whitish.

On rotten wood. Victoria.

- 154. *Agaricus (Pleurotus) nidiformis.*** *Berk. in Hook.*  
*Journ.* III., 185. *Sacc. Syll.* 1396.

Very large. Pileus fleshy, cup-shaped, smooth, rufous, margin lobed and torn, thin, acute ; stem central, short, compressed, irregular, firm, smooth, gills decurrent to the base of the stem, broad, distant, here and there branched, ochraceous, interstices quite smooth or reticulate.

On the ground. Swan River.

- 155. *Agaricus (Pleurotus) lampas.*** *Berk. Hook. Journ.*, 1845, p. 44. = *Agaricus noctilucus.* *Berk. Sacc. Syll.* 1397.

Fasciculate, phosphorescent. Pileus central lobed, fleshy, smooth, fulvous, turning black (4 in. diam.), margin thin and turned in; stem compressed, thickened above, solid, at length splitting (2 in. long,  $\frac{1}{2}$  in. thick), smooth; gills narrow, quite entire, and deeply decurrent.

On stems of *Grevillea*. W. Australia. Tasmania.

- 156. *Agaricus (Pleurotus) candescens.*** *Müll. Linn. Journ.* xiii., 157. *Sacc. Syll.* 1400.

Pileus excentric, smooth, white, then becoming dingy ( $1\frac{1}{2}$ -2 in. diam.); margin inflexed; stem dilated above, smooth (1 in. diam.); gills thin, very decurrent, here and there torn. Strongly phosphorescent.

On dead wood. Victoria.

- 157. *Agaricus (Pleurotus) phosphoreus.*** *Berk. Hook. Journ.* vii., 572. *Sacc. Syll.* 1401.

Pileus infundibuliform, smooth, pallid, densely caespitose, stems for the most part central, attenuated downwards, rather silky, gills rather broad, entire, descending and making lines on the top of the stem.

On roots of trees. Tasmania.

- 158. *Agaricus (Pleurotus) salignus.*** *Fr. Hym. Eur.* 174. *Cooke Illus. t.* 288. *Sacc. Syll.* 1405.

Pileus compact, or spongy, rather dimidiate, horizontal, at first pulvinate, even, then with the disc depressed, substrigose (10 c.m. long); stem short, white, tomentose (1-2 c.m.); gills decurrent, somewhat branched, eroded, distinct at the base, nearly of the same colour.

On trunks. Victoria. N.S.Wales. S. Australia.

- 159. *Agaricus (Pleurotus) clitocyboides.*** *Cke. & Mass. Grev.* xv., 98.

Pileus convex, depressed, thin, smooth, even, pallid, ochraceous, at length becoming reddish (2 in. diam.); margin membranaceous, faintly striate; stem ascending, curved, nearly equal, solid, a little thickened towards either end, paler, clad with white flocci at the base ( $1\frac{1}{2}$ -2 in. long, 2-3 lines thick), disc fleshy; gills crowded, thin, very decurrent, rather narrow, white. Spores elliptical,  $5 \times 2 \mu$ .

On old fern logs. Victoria.

- 160. *Agaricus (Pleurotus) sulciceps.*** *Cooke & Mass. Grev.* xviii., 3.

Pileus fleshy, thin, plane, then infundibuliform, radiately rugose, almost sulcate, smooth, sooty-brown, disc darker, rather velvety (1-2 in. diam.); margin spreading, crisate, often somewhat lobed; stem thin, hollow, compressed, curved, striate, whitish ( $1-1\frac{1}{2}$  in.

long, 2 lines thick) ; gills thin, distant, attenuated behind, decurrent, interstices veined, white ; spores  $5 \times 3 \mu$ .

On rotten wood. Queensland.

**161. Agaricus (Pleurotus) Guilfoylei.** *Berk. Linn. Journ.* XIII., 158. *Sacc. Syll.* 1409.

Whitish. Pileus reniform ( $1\frac{1}{2}$  in. broad), somewhat orbicular, tomentose behind ; margin turned in ; stem obsolete ; gills thin, edge very acute.

On trunks. N.S.Wales. Queensland.

b. DIMIDIATI. *Pileus lateral, immarginate behind, not at first resupinate.*

**162. Agaricus (Pleurotus) petaloides.** *Bull Champ. t.* 226, 227. *Fr. Hym. Eur.* 175. *Cooke Illus. t.* 258a. *Sacc. Syll.* 1412.

Ascending ; pileus fleshy, *spathulate*, entire, disc villous, depressed (4 c.m. long,  $2\frac{1}{2}$ -3 c.m. broad) ; stem *compressed*, villous ( $2\frac{1}{2}$  c.m. long) ; gills decurrent, crowded, narrow, whitish ; spores  $7\frac{1}{2} \times 3\frac{1}{2} \mu$ .

On the ground. Victoria.

**163. Agaricus (Pleurotus) pulmonarius.** *Fr. Hym. Eur.* 176. *Fr. Icon. t.* 87, f. 2. *Sacc. Syll.* 1416.

Horizontal. Pileus greyish to tan-colour, fleshy, soft, *rather convex, obovate* or reniform, smooth (5-15 c.m. broad) ; stem lateral, *straight*, very short, villous ; gills plano-decurrent, simple, whitish, becoming livid.

On trunks. Victoria. N.S.Wales.

**164. Agaricus (Pleurotus) eucalyptorum.** *Fr. Pl. Preiss.* 131. *Sacc. Syll.* 1423.

Pileus fleshy, sessile, dimidiate, reniform, convex, then plane, clad with a rough wool, bay-brown ; gills simple, white.

On *Eucalyptus* bark. W. Australia.

**165. Agaricus (Pleurotus) mitis.** *Pers. Syn.* 481. *Cooke Illus. t.* 211. *Sacc. Syll.* 1424.

Pileus rather fleshy, tough, *reniform*, even, smooth, dry, *growing pale* ( $2\frac{1}{2}$  c.m. broad) ; stem lateral, *compressed, dilated upwards*, clad with little white scales, nearly obsolete when mature ; gills determinate, crowded, distinct, white.

On dead wood. Queensland.

**166. Agaricus (Pleurotus) limpidus.** *Fr. Icon. t.* 88, f. 3. *Cooke Illus. t.* 276b. *Sacc. Syll.* 1427.

Pileus rather fleshy, obovate or kidney-shaped (2 c.m. broad), even, smooth, *white, hygrophanous*, attenuated behind into a rudimentary stem ; gills linear, crowded, *decurrent at the base*, white.

On trunks. N.S.Wales.

**167. *Agaricus (Pleurotus) chætophyllus.*** *Sacc. Hedw.*  
1889, p. 125, tab. II., f. 6.

Dimidiate, obovate-spathulate, thin, very shortly stipitate; margin acute, then nearly straight, densely but shortly white-tomentose; stem rather thick, rugulose; gills narrow, much crowded, often entire, white, then clay-colour, reaching the stem, everywhere rough with fusoid, subochraceous, continuous, setæ (cystidia?); spores elliptical-reniform, hyaline,  $5 \times 3 \mu$  even.

On branches. Middle Australia.

Pileus with stem 15-20 m.m. long, 12-14 m.m. broad; stem 3 m.m. thick.

**168. *Agaricus (Pleurotus) imberbis.*** *Kalch. Grev. VIII.*  
152, t. 142, f. 6. *Sacc. Syll.* 1429.

Dimidiate, sessile, reniform (2-4 lines broad), membranaceous, horizontal, convex, then plane, smooth; gills scarcely crowded, branched, whitish, rugulose when dry and tan-coloured; spores shortly ovate,  $7 \times 5 \mu$ .

On wood. N.S. Wales.

**169. *Agaricus (Pleurotus) caryophyllus.*** *Berk. Linn.*  
*Journ.* XIII., 157. *Sacc. Syll.* 1442.

Pale, fulvous; pileus attenuated behind, flabelliform, much lobed, thin, smooth; margin very thin (6 c.m. broad), hyaline, narrowly inflexed; gills narrow, even.

On wood. N.S. Wales? Victoria.

**170. *Agaricus (Pleurotus) affixus.*** *Berk. in Herb. Sacc.*  
*Syll.* 1444.

Gregarious; pileus (3 m.m. broad), at length attached by the side, cup-shaped, plicately striate; stem short, thin, reflexed; gills ascending, arcuate, adnate.

On *Eucalyptus amygdalina*. Tasmania.

**171. *Agaricus (Pleurotus) Thozetii.*** *Berk. Linn. Journ.*  
XVIII., 388. *Sacc. Syll.* 1445.

Pileus flabellate, lobate, arising from a rooting stem, whitish ochre; gills rather broad, of the same colour.

On dead leaves. Queensland.

**172. *Agaricus (Pleurotus) flabellatus.*** *Berk. & Br. Linn.*  
*Journ.* XI., 528. *Sacc. Syll.* 1449.

Pileus flabelliform, thin, white or becoming reddish, tomentose, then smooth, attenuated behind (2-5 c.m. long); stem very short, tomentose ( $\frac{1}{2}$ -1 c.m. long); gills narrow, decurrent.

On dead wood. Queensland.

Adhering to wood by a spongy base, found also in Ceylon, Central America, and South Africa.

**173. *Agaricus (Pleurotus) semisupinus.*** *Berk. & Br. Linn.*  
*Journ.* XI., 529. *Sacc. Syll.* 1469. = *Agaricus nidulus.* *B. & C.*

Pileus at first pezizæform, villous, at length half-flattened and turned up, white (4 m.m. broad); gills ventricose, springing from

a tomentose disc, turning reddish with age; spores subglobose, 10-13  $\mu$  long.

On branches and leaves. Queensland. Victoria.

**174. *Agaricus (Pleurotus) semiliber.*** *Berk. & Br. Linn. Trans.* II., 54. *Sacc. Syll.* 1470.

White; pileus half-adherent, silky, pallid, yellow; stem lateral, short; gills thin, rather broad, discoloured; spores ovate, 7  $\mu$  long.

On wood. Queensland.

Resembling *Ag. semisupinus*, but without the central disc in which the gills are inserted in that species.

**175. *Agaricus (Pleurotus) sordulentus.*** *Berk. & Br. Fung. Brisb.* II., 54. *Sacc. Syll.* 1473.

Pileus orbicular, somewhat reniform (4 c.m. broad), dirty white, at first rather hairy, then becoming smooth; margin incurved; stem obsolete or fixed by the vertex; gills white, ventricose.

On wood. Queensland.

**176. *Agaricus (Pleurotus) scabriusculus.*** *Berk. Linn. Journ.* XIII., 157. *Sacc. Syll.* 1475.

White, sessile. Pileus subdimidiate, narrow, or flabelliform (1½-3 c.m. broad), rather rough behind, without striæ, margin lobed; gills narrow, arising from a tomentose point. Spores 4  $\mu$ .

On rotten wood. Victoria.

**177. *Agaricus (Pleurotus) bursæformis.*** *Berk. Fl. Tasm.* II., 245. *Sacc. Syll.* 1487.

Pileus affixed behind, pouch-like, whitish, tomentose, becoming smooth in front (2-4 c.m. broad); gills rather decurrent, striate. Spores subglobose, 6-7  $\mu$  long.

On rotting bark. Tasmania.

**178. *Agaricus (Pleurotus) lividulus.*** *B. & C. Exp. No.* 33. *Sacc. Syll.* 1488.

Resupinate; pileus reniform or flabellate, at length lobed; turning livid purple, clad with a powdery down, becoming smooth (½-1 c.m. broad). Stem none, gills of the same colour as the pileus, turning white.

On dead branches. Tantawanglo.

**179. *Agaricus (Pleurotus) atrocæruleus.*** *Fr. Hym. Eur.* 179. *Sacc. Syll.* 1492. *Cooke Illus. t.* 243b.

Pileus fleshy, upper stratum gelatinous, at first resupinate, then obovate, reniform (1-2 in. diam.), tomentose, dark blue; gills crowded, white, becoming yellowish. Spores 7½ × 3  $\mu$ .

On trunks. W. Australia. Victoria.

**180. *Agaricus (Pleurotus) applicatus.*** *Batsch. Elen. f.* 125. *Sacc. Syll.* 1504. *Cooke Illus. t.* 244c.

Dark cinereous; pileus submembranaceous (3-7 m.m. broad),

rather firm, *cup-shaped*, resupinate, then reflexed, somewhat striate, *subpruinose*, villous at the base; gills loose, paler.

On dead fallen branches. Victoria. Queensland. W. Australia. Tasmania.

**181. *Agaricus (Pleurotus) lenticula.* Kalch. Grev. VIII., p. 151, t. 142, f. 3. Sacc. Syll. 1506.**

Small. Adnate by the back, orbicular, plane (1-3 m.m. diam.), almost naked, olive brown or powdered with white; gills linear, simple, crowded, concurrent in a somewhat excentric point, olive-tawny.

On trunks. Queensland.

**182. *Agaricus (Pleurotus) Tasmanicus.* Berk. Fl. Tasm. II., 245. Sacc. Syll. 1510.**

Pileus reniform, even, smooth ( $1\frac{1}{2}$ -3 c.m. broad), invested with a gelatinous pellicle; stem very short, tomentose or obsolete; gills broad, rather distant, thin.

On rotten wood. Tasmania.

**183. *Agaricus (Pleurotus) diversipes.* Berk. Fl. Tasm. t. 181, f. 4. Sacc. Syll. 1511.**

Pileus umbilicate or lateral, pellucid, invested with a gelatinous stratum (4 c.m. or more broad), stem somewhat cartilaginous, compressed, hollow, elongated (2-3 c.m. long), short or obsolete; gills distant, decurrent, interstices even.

On rotten wood. Queensland. Tasmania.

**184. *Agaricus (Pleurotus) striatulus.* Fr. Icon. t. 89, f. 5. Sacc. Syll. 1518. Cooke Illus. t. 212b.**

Pale *cinereous*. Pileus very delicate, striate, flaccid, smooth (4-7 m.m. broad); gills few, distant.

On firwood twigs. Queensland.

**185. *Agaricus (Pleurotus) subbarbatus.* B. & C. Linn. Journ. x., 288, xi., 525. Sacc. Syll. 1522.**

Dark brown. Pileus flabelliform, delicately hisped, finely striate (8 m.m.), margin undulate; stem none; gills of the same colour, narrow.

On rotten wood. Victoria.

**186. *Agaricus (Pleurotus) perpusillus.* Fr. Hym. Eur. 181. Fl. Dan. t. 1295, f. 1. Sacc. Syll. 1523.**

White. Pileus tough, resupinate, then reflexed, even, smooth (4-7 m.m. diam.); gills few, broad.

On trunks and branches. W. Australia.

**187. *Agaricus (Pleurotus) chioneus.* Pers. M. E. III., t. 26, f. 10-11. Sacc. Syll. 1527. Cooke Illus. t. 212d.**

Snow-white, subresupinate, minute; pileus very thin, villous (1-4 m.m. broad); gills rather broad; stem very short, villous, at length obsolete.

On wood or dung. W. Australia. Victoria.

**188. *Agaricus (Pleurotus) australis.* Cke. & Mass. Grev. xv., 93.**

Pileus fleshy, convex, smooth, umber (2-3 in.); stem somewhat lateral, short, thick, clad with a white tomentum, solid (about an inch long and thick); gills broad, distant, decurrent; spores cylindrically-elliptic, straight or curved,  $16-18 \times 4 \mu$ .

On roots of *Leptospermum*. S. Australia. (Fig. 10).

**189. *Agaricus (Pleurotus) euphyllus.* Berk. Handbk. N.Z. Flora p. 755.**

Pileus 3 in. across, finely striate, and coarsely wrinkled longitudinally when dry, reniform, glabrous, pale chestnut; stem none or obsolete; gills broad, interstices smooth.

On wood. Queensland. N. Zealand.

Series 2. ***Hyporhodii.* Fr. Epic. 138.**

*Spores pink or salmon colour.*

*Sub-Genus 12. METRARIA. Cooke & Mass.*

Universal veil at first continuous, distinct from the cuticle of the pileus, forming a volva at the base; ring manifest; spores pink. Analogous to *Amanita*.

**190. *Agaricus (Metraria) insignis.* C. & M. Grev. xix., 105.**

Pileus convex, then flattened and depressed in the centre (10 c.m. diam.); margin cream colour, disc darker and rufescent, smooth, viscid, shining when dry; stem solid, then hollow (10 long,  $2\frac{1}{2}$  thick), equal, bulbous at the base, whitish, smooth, rather fibrous; volva rather lax, ring dependent, membranaceous; gills adnate, lanceolate, or attenuated in front, pink; spores apiculate at the base,  $10 \times 6 \mu$ .

In woods. Victoria.

*Sub-Genus 13. VOLVARIA. Fr. S. M. I., p. 277.*

Veil universal, forming a perfect volva, distinct from the cuticle of pileus; stem distinct from the hymenophore; ring absent; gills free, rounded behind, at first white, then pink, soft, liquescent.

\* *Pileus dry, silky or fibrillose.*

**191. *Agaricus (Volvaria) bombycinus.* Schæff. Icon. t. 98. Fr. Hym. Eur. 182. Cooke Illus. t. 293.**

Pileus fleshy, soft, campanulate, then expanded, subumbonate, silky, fibrillose; self-coloured (3-7 in. diam.), whitish, then ochraceous; stem solid, attenuated, smooth (3-6 in. long,  $\frac{1}{2}$  in. thick); volva very large, membranaceous; gills free, flesh coloured.

On decayed wood. Victoria.

**192. *Agaricus (Volvaria) Taylora.* Berk. Outl. p. 140. Fr. Hym. Eur. 183. Cooke Illus. t. 296. Sacc. Syll. v., 2719.**

Pileus thin, conical, obtuse, livid, striato-rimose from the apex ( $4\frac{1}{2}$  c.m. broad); stem pale, solid, smooth, nearly equal (6 c.m.

long, 6 m.m. thick); volva lobed, brown, small; gills uneven, broad in front, attenuated behind, rose-coloured; spores  $9 \times 6 \mu$ .

On the ground. Tasmania. Victoria.

**193. Agaricus (Volvaria) xanthocephalus.** Berk. Hook. Journ., 1845, 45. Sacc. Syll. v., 2731.

Pileus convex, golden yellow, spotted with white from the remains of the volva (1-2 in. diam.); stem bulbous (1-2 in. high, 2-3 lines thick); volva adnate, with the margin free, cream-colour; gills remote, attenuated, free, pallid gilvous.

On the ground. W. Australia.

*\*\* Pileus more or less viscid, smooth.*

**194. Agaricus (Volvaria) speciosus.** Fr. Hym. Eur. 183. Cooke Illus. t. 297. Sacc. Syll. v., 2735.

Pileus fleshy, soft, campanulate, then expanded, obtuse, smooth (8-14 c.m. broad), even, viscid, disc grey; stem solid, attenuated, rather bulbous (10-20 c.m. long); volva loose, villous, as well as the stem; gills free, rose coloured. Spores  $12-18 \times 8-10 \mu$ .

On dunghills, roadsides, etc. Victoria.

**195. Agaricus (Volvaria) parvulus.** Weinm. Ross. 238. Fr. Hym. Eur. 184. Cooke Illus. t. 299. Sacc. Syll. v., 2740.

Pileus rather fleshy, conic, then expanded, umbonate, dry ( $1\frac{1}{4}$  c.m. broad); stem stuffed, equal, silky (1-2 $\frac{1}{2}$  c.m. long); volva small, lobed; gills free, rose-coloured. Spores  $5-8 \times 3-4 \mu$ .

In pastures, after stormy weather. Queensland. (Fig. 11).

*Sub-Genus 14. ANNULARIA. Schulz.*

Stem with a ring, but destitute of a volva; gills free; hymenophore distinct from the stem.

**196. Agaricus (Annularia) insignis.** Cke. & Mass. Grev xviii., 8.

Pileus fleshy, convex, pallid, cuticle broken up into broad adnate, darker scales (3-5 in. diam.); margin incurved, flesh thick ( $\frac{1}{2}$ - $\frac{3}{4}$  in.), firm, white; stem short, thick (2 in. long, 1 in. and more thick), obclavate, whitish, annulate, zoned below the ring, with tawny scales, and often spotted with flesh colour; gills free, rounded behind, rather crowded, whitish, then salmon-colour. Spores subglobose, even,  $5 \mu$  diam.

On the ground. Victoria. (Fig. 12).

*Sub-Genus 15. PLUTEUS. Fr. Epicr. p. 140.*

Destitute of volva and ring; hymenophore distinct from the stem; gills rounded behind, free (never emarginate), at first cohering, white, then flesh-coloured.

**197. Agaricus (Pluteus) cervinus.** Schæff. Icon. t. 10. Fr. Hym. Eur. 185. Cooke Illus. t. 301. Sacc. Syll. v., 247.

Pileus fleshy, campanulate, then expanded, nearly even, smooth (6-8 c.m. or more broad), then clad with evanescent fibrillose



*scales*; margin naked; stem *solid*, clad with black fibrils; gills free, crowded, white, then flesh-coloured. Spores  $7-8 \times 5-6 \mu$ .

On trunks of trees. Tasmania. Victoria.

**198. *Agaricus (Pluteus) Wehlianus.* Mueller. Grev. xv., 93.  
Sacc. Syll. v., 2806.**

Pileus fleshy, campanulate, then expanded, obtusely umbonate, even, shining, ochraceous, white, disc darker (3 in. or more diam.); stem long, solid, incrassated below, equal above, whitish, smooth (6-8 in. long,  $1\frac{1}{2}$  in. thick, nearly an inch at the base); gills free, broad, ventricose, white, then flesh-coloured; spores pallid, ochraceous, elliptical, guttulate,  $14-16 \times 10 \mu$ .

On rotten wood, or on the ground. Victoria. (Fig. 13).

*Sub-Genus* 16. **ENTOLOMA.** Fr. *Epicr.* p. 143.

Without a distinct veil; stem fleshy or fibrous, soft, sometimes waxy; pileus rather fleshy, margin incurved; hymenophore continuous with the stem; gills sinuately adnexed behind or seceding.

**199. *Agaricus (Entoloma) melaniceps.* Cke. & Mass. Grev.  
xvi., 31.**

Pileus fleshy, compact, convex, obtuse, even, smooth, dark sooty brown ( $1\frac{1}{2}$ -2 in. diam.); stem solid, nearly equal, short, smooth, pallid (1 in. long, 3-4 lines thick); gills rounded, adnate, pale grey, at length flesh-colour; spores subglobose, rosey,  $10-12 \mu$  diam.

On the ground. Victoria.

**200. *Agaricus (Entoloma) galbineus.* Cke. & Mass. Grev.  
xvii., 7.**

Sulphur colour. Pileus rather fleshy, convex, then expanded, obtusely umbonate (1-2 in. broad), umbo darker, almost saffron-colour, smooth, moist; stem equal, fibrillose, fistulose (2 in. long, 2-3 lines thick); gills slightly adnexed, ventricose, pallid; spores rosey, globose, angular,  $10 \mu$  diam.

On the ground. Victoria. (Fig. 14).

**201. *Agaricus (Entoloma) læticolor.* Cke. & Mass. Grev.  
xvi., 30.**

Somewhat caespitose. Pileus rather fleshy, convex, at length plane, obtuse, even, shining, amethyst colour (scarcely exceeding 1 in.); stem equal, thin, nearly solid, paler (2 in. long, 2 lines thick); gills adnexed, rather ventricose, scarcely crowded, rosey; spores globose, warted,  $12-14 \mu$  diam.

In sandy soil. Victoria.

**202. *Agaricus (Entoloma) Bloxami.* B. & Br. Outl., p.  
143. Fr. Hym. Eur. 193. Cooke Illus. t. 327. Sacc. Syll.  
v., 2828.**

Pileus compact, campanulate, obtuse, somewhat lobed, moist ( $2\frac{1}{2}$ -6 c.m. broad), blackish-blue, somewhat silky; flesh white;

stem *solid*, slightly attenuated upwards, obtuse at the base (4-6 c.m. long, 2 m.m. thick); gills rather broad, attenuated, adnexed, *reddish*; spores globose, irregular,  $8\ \mu$  diam.

In open exposed pastures. Victoria.

**203. *Agaricus (Entoloma) panniculus.* Berk. Flor. Tasm. t. 181, f. 5. Sacc. Syll. 2863.**

Pileus thin, campanulate, obtuse, flocculose, dark violet (30-31 m.m. diam), as well as the stem, which is thickened downwards, and whitish tomentose at the base (6 c.m. long, 2-3 m.m. thick); gills adnate, receding from the stem; spores subglobose, 12-13  $\mu$  diam.

Amongst ferns. Tasmania.

*Sub-Genus 17. CLITOPILUS. Fr. Epicr. p. 148.*

Stem fleshy or fibrous, attenuated upwards into the pileus, the margin of which is at first involute; hymenophore continuous with the stem; gills equally attenuated behind, and somewhat decurrent, not seceding or sinuate.

**204. *Agaricus (Clitopilus) cancrinus.* Fr. Hym. Eur. 199. Cooke Illus. t. 501. Sacc. Syll. v., 2900.**

Pileus between fleshy and membranaceous, umbilicate, then convex and expanded ( $2\frac{1}{2}$  c.m. broad), unequal, *flocculose, even*, flesh-coloured, white, without striæ, growing pale; stem stuffed, then fistulose, tough, short, *smooth*, white (3 c.m. long, 2-4 m.m. thick); gills decurrent, distant, arcuate, white, then pale flesh-colour.

In grass fields. Victoria. Queensland. S. Australia. (Fig. 15).

*Sub-Genus 18. LEPTONIA. Fr. S. M. I., p. 201.*

Stem cartilaginous, tubular (the tube stuffed or hollow), polished, rather shining; pileus thin, umbilicate, or with the disc darker, cuticle fibrillose, or breaking up into darker scales, margin at first incurved; gills at first adnexed, or adnate, but readily separating.

**205. *Agaricus (Leptonia) lampropus.* Fr. Hym. Eur. 202. Cooke Illus. t. 331. Sacc. Syll. v., 2923.**

Pileus rather fleshy, obtuse, convex, then plane, not striate, at length depressed, squamulose, broken up into flocci (1-3 c.m. broad); stem subfistulose, even (2-3 c.m. long, 2-5 m.m. thick), unspotted, *steel-violet*; gills adnate, ventricose, whitish, then roseate; spores irregular,  $10-14 \times 6-8\ \mu$ .

In pastures. Victoria.

**206. *Agaricus (Leptonia) quinquecolor.* Cke. & Mass. Grev. xvii., 7, xix., 5. = *Agaricus (Entoloma) flavido-rufus*, Cke. & Mass. Grev. xv., 99.**

Pileus membranaceous, convex, smooth, slightly virgate with radiating pink fibrils; margin yellowish, disc brownish brick-red (about 1 in. diam.); stem cylindrical, equal, or slightly attenuated upwards, fistulose, bay brown, whitish flocculose at the base (2 in.

long, 1 line thick), usually cæspitose; gills sinuately adnate, rosey; spores globose, rough, 8-10  $\mu$ .

On black loam. Victoria. (Fig. 16).

**207. *Agaricus (Leptonia) aquilus.*** *Fr. Hym. Eur.* 204.  
*Fr. Icon. t.* 98, *f.* 3. *Sacc. Syll.* 2945.

Pileus rather membranaceous, convex, then plane, deeply umbilicate, faintly striate, smooth, rather virgate, bay brown ( $1\frac{1}{4}$ - $2\frac{1}{2}$  c.m. broad); stem short, stuffed, subfibrillose, not punctate, brown, thickened upwards ( $2\frac{1}{2}$  c.m. long, 2 m.m. thick); gills deeply sinuate-adnexed, very broad, rather distant, umber, then purple.

On the ground. Lake Bonney.

**208. *Agaricus (Leptonia) melanurus.*** *Cke. & Mass. Grv.*  
*xix.*, 89.

Pileus campanulate, subumbonate, then expanded, shining black, cracking radiately (2 c.m. broad), silky; stem cylindrical (5-6 c.m. long, 2 m.m. thick), swollen abruptly at the rooting base, greyish, with black striæ; gills reaching the stem, lanceolate, pallid, then pinkish, margin blackish, with a line of large dark cystidia, having one to three blunt teeth at the apex; spores subglobose ( $7 \times 5 \mu$ ).

On the ground. Victoria.

*Sub-Genus* 19. **NOLANEA.** *Fr. S. M. i.*, p. 204.

Stem fistulose, rarely with a medullate tube, cartilaginous; pileus rather membranaceous, campanulate, subpapillate, striate or sometimes smooth, clad with flocci, margin straight, at first pressed to the stem, not involute; gills free or affixed, not decurrent.

**209. *Agaricus (Nolanea) pascuus.*** *Pers. Comm. t.* 209.  
*Fr. Hym. Eur.* 206. *Cooke Illus. t.* 376. *Sacc. Syll. v.*, 2960.

Pileus membranaceous, conical, then expanded, subumbonate, smooth, striate, hygrophanous, when dry shining like silk (2-4 c.m. broad); stem fistulose, fragile, *silky fibrous striate* (2-8 c.m. long, 2-5 m.m. thick), gills attenuated behind, nearly free, ventricose, crowded, dirty greyish. Spores irregular,  $7 \times 11 \mu$  diam.

In pastures. Inodorous. Tasmania. (Fig. 17).

**210. *Agaricus (Nolanea) mammosus.*** *Fr. Hym. Eur.* 207.  
*Cooke Illus. t.* 377b. *Sacc. Syll. v.*, 2947.

Pileus somewhat membranaceous (4 c.m. broad), conico-campanulate, *papillate, striate, smooth*, hygrophanous; when dry isabelline and silky; stem fistulose, rigid, *polished*, even, smooth (7 c.m. long), *mealy at the apex*; gills affixed, seceding, rather crowded, grey. Spores angular,  $7 \times 10 \mu$  diam.

In meadows. Victoria.

**211. *Agaricus (Nolanea) rufo-carneus.*** *Berk. Outl.* 148.  
*Fr. Hym. Eur.* 208. *Cooke Illus. t.* 378b. *Sacc. Syll.*  
*v.*, 2980.

Pileus submembranaceous, hemispherical, umbilicate, *indistinctly fibrillose-squamulose*, red brown ( $2\frac{1}{2}$  c.m. broad), margin striate;

stem elongated, pale rufous, rather thickened at the base (7 c.m. long, 2 m.m. thick), gills adnate, ventricose, attenuated behind, slightly connected and traversed by veins.

On heaths. Victoria.

*Sub-Genus 20. ECCILIA. Fr. S. M. i., p. 207.*

Stem cartilaginous, tubular (tube stuffed or hollow), expanded upwards into the rather membranaceous pileus, margin at first inflexed. Gills attenuated behind, truly decurrent.

**212. Agaricus (Eccilia) rhodocylix.** *Lasch. in Fr. Hym.*

*Eur. 213. Cooke Illus. t. 343a. Sacc. Syll. v., 3030.*

Pileus membranaceous, rugulose, floccose (8-13 m.m. broad), umbilicate, then infundibuliform; *remotely striate when moist, tawny*, flocculose when dry, grey; stem stuffed, slender, incurved, even, smooth, cinereous (1-2½ c.m. long, 1 m.m. thick); gills strongly decurrent, *distant*, thick, whitish, then flesh-colour. Spores 10  $\mu$  diam.

On rotten wood. Victoria. (Fig. 18).

*Sub-Genus 21. CLAUDOPUS. Smith.*

Pileus excentric, lateral or resupinate. Spores rubiginous.

**213. Agaricus (Claudopus) variabilis.** *Pers. Obs. II., t. 5,*

*f. 12. Cooke Illus. t. 344a. Sacc. Syll. v., 3037.*

Pileus submembranaceous, resupinate, then reflexed (1-2½ c.m. broad), *silky with white down*; gills radiating, rather distant, white, then rusty-red, at length pale cinnamon. Spores 6-7  $\times$  2½-4  $\mu$ .

On sticks, etc. Victoria. Queensland. (Fig. 19).

Series 3. **Dermini.** *Fr. Epicr. p. 160.* Spores various shades of reddish-brown, brown, red or yellowish-brown.

*Sub-Genus 22. LOCELLINIA Gill. (Acetabularia, B.)*

Universal veil distinct from the pileus; hymenophore distinct; gills free, spores tawny or brown.

**214. Agaricus (Locellinia) cynopotamia.** *Berk. Linn.*

*Journ. XVIII., 289. Sacc. Syll. 3141.*

Pileus (2 c.m. broad), stem horny (3 c.m. long, 1 m.m. thick), volva of interwoven intricate fibres; gills pale fawn colour, leaving a free space round the stem. Spores 8-10  $\mu$  diam.

On the ground. W. Australia.

*Sub-Genus 23. PHOLIOTA. Fr. S. M. i., p. 240 (fig. 19).*

Spores sepia-brown, bright yellowish-brown, or light red; stem confluent and homogeneous with the hymenophore, furnished with a persistent, friable, fugacious ring.

a. HUMIGENI. *Terrestrial, rarely caespitose.*

\* EUDERMINI. *Spores ferruginous.*

- 215. *Agaricus (Pholiota) erebius.*** *Fr. Hym. Eur.* 216.  
*Sacc. Syll.* v., 3050. *Cooke Illus. t.* 358. = *Ag. (Arm.)*  
*denigratus. Fr.*

Pileus fleshy, thin, smooth, rather viscid, lurid, hygrophanous (4-5 c.m. broad), margin striate, stem fistulose, equal, fibrillose, pallid, striate (6 c.m. long, 6 m.m. thick), as well as the apical, campanulately reflexed ring; gills adnate, rather distant, pallid, then dirty-cinnamon; spores ovate, even.

In grassy places. Victoria.

The form called *Ag. denigratus* is the state when the gills are pale.

- 216. *Agaricus (Pholiota) togularis.*** *Bull. t.* 595, f. 2. *Fries Hym. Eur.* 216. *Cooke Illus. t.* 350. *Sacc. Syll.* v., 3052.

Pileus fleshy, thin, campanulate, expanded, smooth (3-4 c.m. broad), pale ochre; stem fistulose, rigid, fibrous or strigose, and cracking, pallid above (6-8 c.m. long, 4 m.m. thick), ring entire, distant; gills adnate, then seceding, ventricose, narrow behind, becoming yellowish. Spores 8-10  $\times$  4-6  $\mu$ .

In grassy places, etc. Victoria.

- 217. *Agaricus (Pholiota) recedens.*** *Cke. & Mass. Grev.* XVIII., 25.

Pileus rather fleshy, convex, then expanded, rather umbonate, smooth, dry, golden tawny, disc darker (1 in. diam.), margin thin, at length faintly striate; stem elongated, cylindrical, equal (3-4 in. long, 2 lines thick), of the same colour as the pileus, or darker below, ring ample spreading half-way down; gills adnate, rather distant, ventricose, thin, cinnamon. Spores elliptical, acuminate, bright brown, 9  $\times$  5  $\mu$ .

On the ground. Victoria.

- 218. *Agaricus (Pholiota) blattarius.*** *Fries Hym. Eur.* 216. *Cooke Illus. Supp. t.* 1172a.

Pileus rather fleshy, soon flattened, somewhat umbonate, smooth, ferruginous, hygrophanous, margin striate, stem fistulose, equal, straight, ring entire, distant, white, gills free, rounded, ventricose, crowded, watery cinnamon.

On the ground. Victoria.

**\*\* PHÆOTÆ.** *Spores dusky, ferruginous.*

- 219. *Agaricus (Pholiota) præcox.*** *Pers. Syn.* 420. *Fr. Hym. Eur.* 216. *Cooke Illus. t.* 360. *Sacc. Syll.* v., 3055.

Pileus fleshy, soft, convexo-plane, obtuse, at length smooth, even, white, then yellowish (3-6 c.m. broad); stem stuffed, then hollow, cylindrical, pubescent or mealy (5-8 c.m. long, 4-7 m.m. thick), at length smooth, white as well as the ring; gills emarginate, adnexed, crowded, white, then brownish. Spores 8-13  $\times$  6-7  $\mu$ .

In gardens and pastures. W. Australia.

**220. Agaricus (Pholiota) disruptus.** *Cke. & Mass. Grev.*  
xix., 89.

Pileus convex, fleshy, creamy white, at first smooth, then cracked deeply into large areolæ, especially about the fleshy disc (8-10 c.m. broad), margin incurved; stem elongated, cylindrical, expanding into the pileus, sometimes slightly swollen at the base (10 c.m. long, 10-15 m.m. thick), same colour as the pileus, hollow, striate, cracking, and subsquamulose, with a strong cord-like mycelium; ring narrow, pendulous; gills adnate, rather ventricose, broad, not crowded, dull pinkish white, then umber. Spores elliptical, tawny-brown,  $14 \times 9 \mu$ .

On the ground. Victoria.

b. TRUNCIGENÆ. *Growing on wood.*

**221. Agaricus (Pholiota) pudicus.** *Fr. Hym. Eur.* 218.  
*Sacc. Syll.* 3065. *Cooke Illus. t.* 362.

Pileus fleshy, convex, then expanded, obtuse, *even, dry, smooth* (6-7 c.m. broad); stem solid, nearly equal, even ( $6 \times 1$  c.m. variable); ring spreading, persistent; gills rounded behind, adnate, ventricose, *whitish*, then tawny. Spores  $8 \times 5-6 \mu$ .

On trunks, etc. Victoria.

**222. Agaricus (Pholiota) phyllicigena.** *Berk. Chall. Exp.*  
*No.* 75. *Sacc. Syll.* 3071.

Pileus convex, fleshy, areolate, tawny, at first quite smooth (8 c.m. and more broad); stem thick, attenuated upwards, thickened below, transversely flocculose beneath the thick movable ring (5 c.m. long, 4 c.m. thick); gills rather decurrent, clay colour. Spores obliquely oblong, about  $8 \mu$  long, but variable.

On trunks of *Phytica*. Queensland. (Fig. 21).

**223. Agaricus (Pholiota) effusus.** *Kalch. in Aust. Fungi, p.*  
6. *Sacc. Syll.* 3104.

Pileus fleshy, subglobose, obtuse, breaking into polygonal wart-like areolæ, white, stem of the same colour, solid, cylindrical, slightly attenuated upwards, even, effused at the base into a broad membranaceous mycelium, ring membranaceous, persistent, white; gills adnate, crowded, ferruginous-yellow.

On wood. Daylesford.

\* SQUAMOSÆ.

**224. Agaricus (Pholiota) congestus.** *Kalch. Grev. ix., 147,*  
*t.* 145, *f.* 27. *Sacc. Syll.* 3094.

Densely caespitose; pileus fleshy, campanulate, the size of a pea, floccosely squamulose, rather mealy, brownish, as well as the downwards attenuated stem; ring floccose, gills somewhat decurrent, narrow, crowded, ferruginous olive.

On trunks. Daylesford.

A doubtful species, possibly only young state of some such species as *Ag. squarrosus*.

- 225. *Agaricus (Pholiota) spectabilis.*** *Fr. Hym. Eur.* 221.  
*Cooke Illus. t.* 352. *Sacc. Syll.* 3102.

Pileus compact, golden orange, convex, then plane, dry, cuticle torn into fibrous or silky scales (11 c.m. broad); stem solid, ventricose, somewhat rooting (11 c.m. long, 2-3 c.m. thick); gills adnato-decurrent, crowded, narrow, yellow, then ferruginous; spores  $8.9 \times 5 \mu$ . Flesh sulphur yellow.

On dead stumps. Victoria. N.S.Wales.

- 226. *Agaricus (Pholiota) allantopus.*** *Berk. Hook. Journ.* (1845), 45. *Sacc. Syll.* v., 3103.

Pileus fleshy, golden yellow, innately squamose ( $3\frac{1}{2}$  in. broad), stem rather thin, elongatedly bulbous at the base (4 in. high,  $\frac{1}{3}$  in. thick above), gills golden, ferruginous, adnate, spores elliptical.

On the ground. W. Australia. Victoria.

- 227. *Agaricus (Pholiota) flammans.*** *Fr. Hym. Eur.* 222.  
*Cooke Illus. t.* 368. *Sacc. Syll.* 3109.

Pileus fleshy, convex, then plane (4-8 c.m. broad), somewhat umbonate, tawny, dry, clothed with superficial, hairy, paler scales; stem stuffed, then hollow, equal, rather flexuose, squamoso-squarrose (8 c.m. long, 4-7 m.m. thick), ring entire, yellow, as well as the fixed, crowded, quite entire gills; spores ellipsoid,  $4 \times 2 \mu$ .

In pine woods. Queensland.

- 228. *Agaricus (Pholiota) mutabilis.*** *Schæff. Icon. t.* 9.  
*Fr. Hym. Eur.* 224. *Cooke Illus. t.* 355. *Sacc. Syll.* v., 3129.

Pileus fleshy, convex, then expanded, smooth, cinnamon, becoming pale (5 c.m. broad); margin thin; stem stuffed, then hollow, rigid, rough with scales, dark-brown at the base; gills adnato-decurrent, crowded, pallid, then cinnamon colour. Spores  $7-12 \times 4-6 \mu$ .

On trunks or on the ground. Victoria. Tasmania.

#### \*\* HYGROPHANÆ.

- 229. *Agaricus (Pholiota) marginatus.*** *Batsch. f.* 207. *Fr. Hym. Eur.* 225. *Cooke Illus. t.* 372. *Sacc. Syll.* v., 3130.

Pileus rather fleshy, convex, then expanded, smooth, watery cinnamon, moist, hygrophanous; margin striate; stem fistulose, soft, not scaly (6 c.m. long and  $2\frac{1}{2}$  in. thick), pruinose above the fugacious ring, base darker, clothed with whitish velvety down; gills adnate, crowded. Spores  $6-7 \times 3-4 \mu$ .

On the ground amongst firs. Victoria.

- 230. *Agaricus (Pholiota) eriogenus.*** *Fr. Pl. Priess.* 132.  
*Sacc. Syll.* 3128.

Pileus fleshy, thin, convex, smooth, ferruginous; stem fistulose, slender, girt at the base with a dense woolly mycelium; ring torn; gills adnate, crowded, cinnamon.

On trunks. W. Australia.

## \* \* MUSCIGENÆ.

- 231. *Agaricus (Pholiota) pumilus.*** *Fr. Hym. Eur.* 226. *Cooke Illus. t.* 503a. *Sacc. Syll. v.*, 3135.

Pileus somewhat fleshy, hemispherical, obtuse (6-9 m.m. broad), even; stem fistulose, slender, subfibrillose (2-4 c.m. long, 2-3 m.m. thick); ring collar-like, rather fugacious; gills adnate, crowded, broad, pallid-yellowish. Spores 8-10  $\times$  6  $\mu$ .

In woods. N.S.Wales. Victoria.

- 232. *Agaricus (Pholiota) mycenoides.*** *Fr. Hym. Eur.* 226. *Cooke Illus. t.* 503b.

Pileus membranaceous, campanulate, then convex (1-1½ c.m.), deeply striate, hygrophanous; stem fistulose, slender, ferruginous, smooth as well as the pileus (3-4 c.m. long); ring membranaceous, white; gills adnate, rather distant, ferruginous; spores 8-10  $\times$  5-6  $\mu$ .

On the ground, in damp dells. Victoria.

*Sub-Genus* 24. INOCYBE. *Fr. Sys. Myc. i.*, 254.

Universal veil fibrillose, concrete with the cuticle of the pileus; margin often free, and like a cobweb; gills somewhat sinuate (but also adnate, and rarely decurrent), discoloured, not powdery; spores often rough.

I. SQUARROSE.

- 233. *Agaricus (Inocybe) plumosus.*** *Bolt. t.* 33. *Fr. Hym. Eur.* 228. *Cooke Illus. t.* 425a. *Sacc. Syll. v.*, 3148.

Pileus rather fleshy, convexo-plane (4 c.m. broad), disc squarrose with erect fasciculate flocci, margin fibrillose; stem stuffed, then hollow, slender, flexuose, floccoso-squamose, naked above (11 c.m. long, 2-3 m.m. thick); gills subadnate, scarcely crowded, ventricose, quite entire, dingy; spores 8-9  $\times$  4-5  $\mu$ , even.

In moist pine woods. Victoria.

- 234. *Agaricus (Inocybe) cincinnatus.*** *Fr. Hym. Eur.* 228. *Cooke Illus. t.* 425b.

Pileus rather fleshy, convex, then plane, squarrosely scaly (1-1½ c.m. broad); stem solid, thin, squamose (4 c.m. long); gills adnexed, crowded, ventricose, dingy, then violet.

In shady woods. Victoria.

- 235. *Agaricus (Inocybe) lanuginosus.*** *Fr. Hym. Eur.* 227. *Bull. Champ. t.* 370. *Sacc. Syll. v.*, 3155.

Pileus rather fleshy, hemispherical, then expanded, obtuse, foccosely squamose (2 c.m. broad), scales of the disc erect and squarrose (umber, becoming yellowish); stem solid, thin, fibrillosely scaly (6 c.m. long, 2-5 m.m. thick), powdery white at the apex; gills retreating, thin, ventricose, toothed, pallid clay-colour; spores 10-12  $\times$  5  $\mu$ .

On the ground. W. Australia.



II. LACERI. *Pileus squamose, or torn into fibrils; stem paler than pileus and fibrillose.*

**236. Agaricus (Inocybe) flocculosus.** Berk. Eng. Fl. v., p. 97. Cooke Illus. t. 393. Sacc. Syll. v., 3165.

Pileus subcarnose, convex, subcampanulate, umbonate ( $2\frac{1}{2}$  c.m. broad); sericeo-squamulose, *tawny brown*; stem fibrillose, *pale reddish*, squamuloso-pulverulent above (3-5 c.m. long, 3 m.m. thick); gills pale fawn-coloured, then obscurely ferruginous, ventricose, *adnate*; spores  $10 \times 6 \mu$ , smooth.

On naked soil, and amongst grass. Victoria.

III. VELUTINÆ. *Pileus not rinose, cuticle fibrillose.*

**237. Agaricus (Inocybe) gomphodes.** Kalch Grev. VIII., 152, tab. 142, f. 8. Sacc. Syll. v., 3235.

Pileus rather fleshy, campanulate, with a globose pap-like apex, fibrillose, tawny ( $\frac{3}{4}$  in. high and broad); stem stuffed, nearly equal, rather bulb-like at the base, and incrustated with a white mycelium, otherwise pallid rufous (2 in. long,  $1\frac{1}{2}$  lines thick); gills ascending, nearly free, crowded, linear, narrow, straight, greyish umber.

On the ground. N.S. Wales.

**238. Agaricus (Inocybe) gigasporus.** Cke. & Mass. Grev. XVIII., 3.

Pileus rather fleshy, convex then flattened, umbonate (1 c.m. broad), naked, smooth, moist, yellow-brown; stem abruptly rooting, fistulose, equal, or thickened at the base (3-4 c.m. long), smooth, paler, mycelium profuse; gills broad, *adnate*, rather crowded, olive. Spores large,  $18 \times 8-9 \mu$ .

On the ground. Victoria. (Fig. 23).

IV. VISCIDÆ. *Pileus becoming smooth, viscid.*

**239. Agaricus (Inocybe) Victorinæ.** Cke. & Mass. Grev. XVI., 72.

Pileus rather fleshy, obtusely umbonate, convex, at length flattened, whitish, viscid (1 in. diam.), smooth, shining, disc dingy; stem equal, or slightly thickened downwards (2 lines thick), stuffed, smooth, white; gills crowded, at first *adnexed*, sinuate, at length almost free, pallid, then umber; spores even,  $12 \times 7-8 \mu$ .

On grassy ground. Victoria.

Sub-Genus 25. HEBELOMA, Fr. Syst. Myc. i., 249.

Partial veil fibrillose or obsolete. Stem fleshy, fibrous. Apex somewhat mealy. Pileus at first incurved at the margin. Gills sinuate, *adnexed*, edge more or less of a different colour, whitish. Cuticle of the pileus continuous, smooth, rather viscid. Spores clay-coloured.

- 240. *Agaricus (Hebeloma) fastibilis.*** *Fr. Hym. Eur.* 237.  
*Cooke Illus. t.* 406. *Sacc. Syll. v.,* 3259.

Pileus compact, convexo-plane, repand, obtuse, viscid, smooth ( $2\frac{1}{2}$ -8 c.m. broad), gilvous or tan colour, stem solid, firm, sub-bulbous (6-12 c.m. long, variable in thickness), white, fibroso-squamose; veil evident; gills *emarginate*, rather distant, whitish, growing pallid, then clay-coloured or cinnamon. Spores  $10 \times 7-8 \mu$ .

In woods. Victoria.

- 241. *Agaricus (Hebeloma) glutinosus.*** *Lindg. Fries Hym. Eur.* 238. *Cooke Illus. t.* 430. *Sacc. Syll. v.,* 3260.

Pileus fleshy, convex, becoming plane, obtuse, viscous with a tenacious gluten, clad with scattered white superficial squamules, yellowish white, disc-like (6-8 c.m. broad), stem stuffed, nearly bulbous, with whitish squamules, mealy at the apex, corticate (6 c.m. long, 1 c.m. thick), gills adnexed with a sinus, crowded, yellowish, becoming cinnamon clay colour. Spores  $10-12 \times 5-6 \mu$ .

Amongst dead leaves. Victoria.

- 242. *Agaricus (Hebeloma) mesophæus.*** *Fr. Hym. Eur.* 240. *Cooke Illus. t.* 411. *Sacc. Syll. v.,* 3268.

Pileus rather fleshy, conical, convex, then plane, viscid, even ( $2\frac{1}{2}$  c.m. broad), almost naked, gilvous, disc bay; stem subfistulose, equal, slender, fibrillose, white, then ferruginous, pruinose above (5-8 c.m. long, 2-5 m.m. thick); gills *emarginate*, crowded, thin, clay-coloured or ferruginous. Spores  $8-10 \times 5 \mu$ .

In woods, etc. Victoria.

*var. holophæus.* *Fr. Hym. Eur.* 240.

Pileus umbonate, everywhere dark brown, veil weblike, resembling a ring, stem turning brown; gills slightly sinuate.

On the ground. Victoria.

- 243. *Agaricus (Hebeloma) olidus.*** *Cke. & Mass. Grev. xv.,* 93. *Sacc. Syll. v.,* 3275.

Pileus fleshy, convex, viscid, rufous brown, sprinkled with pallid superficial scales (scarcely 1 in. broad), margin incurved, paler; stem nearly equal, fistulose, smooth (1 in. long, 4 m.m. thick); gills lanceolate, attenuated behind and nearly free, pallid clay colour. Spores  $10 \times 6 \mu$ . Odour fœtid.

On stony ground. Lake Bonney.

- 244. *Agaricus (Hebeloma) nudipes.*** *Fr. Hym. Eur.* 242. *Cooke Illus. t.* 418. *Sacc. Syll. v.,* 3291.

Pileus fleshy, convex, then plane, obtuse, even, nearly smooth (2 in. broad), slightly viscid, tan coloured then pale; margin thin; stem solid ( $1\frac{1}{2}$  in. long, 4-5 lines thick), equal, *pelliculose*, smooth, naked, white, fibrillose at the base; gills *emarginate*, crowded, dry, clay-coloured. Spores  $8-10 \times 4-5 \mu$ .

On the ground. Queensland.

**245. Agaricus (Hebeloma) arenicolor.** *Cke. & Mass. Grev.*  
xvii., 7.

Pileus fleshy, convex, then plane, smooth, rather viscid, dingy ochre or sand colour ( $1\frac{1}{2}$ -2 in. broad). Stem cylindrical, subfibrillose, smooth, same colour as the pileus, fistulose, terminating at the base in a conical root (3 in. long,  $\frac{1}{4}$  in. thick), gills adnate, rounded behind, scarcely crowded, ventricose, pallid, then ochraceous. Spores ellipsoid, dingy umber,  $20 \times 10$ -12  $\mu$ .

On the ground. Victoria. (Fig. 22).

PUSILLI. *Pileus scarcely an inch broad.*

**246. Agaricus (Hebeloma) petiginosus.** *Fries Hym. Eur.*  
243. *Cooke Illus. t. 508b. Sacc. Syll. v., 3319.*

Pileus rather fleshy, conical or convex, then expanded, dry, disc swollen, brown, circumference silky grey (1-2 c.m. broad), stem stuffed, tough, slender, powdery, brick-red (2-6 c.m. long, 2 m.m. broad), gills free, ventricose, yellow, then olive bay. Spores  $8$ - $10 \times 6 \mu$ .

On the ground. Victoria.

*Sub-Genus 26. FLAMMULA, Fries.*

Veil fibrillose, or wanting. Stem fleshy, fibrous, not mealy above. Pileus fleshy, margin at first involved (or folded in). Gills decurrent or adnate, without a sinus, commonly quite entire, of one colour.

I. GYMNOTÆ.

**247. Agaricus (Flammula) vinosus.** *Bull. Champ. t. 54.*  
*Fr. Hym. Eur. 244. Cooke Illus. t. 437. Sacc. Syll. v., 3323.*

Pileus fleshy, expanded, at length depressed, dry, ferruginous fawn colour (3-4 c.m. broad). Stem solid, firm, slightly thickened at the base (2-3 c.m. long), *delicately flocculose*, gills decurrent, crowded, simple, narrow, ferruginous; spores 5  $\mu$  long.

On the ground. Victoria.

**248. Agaricus (Flammula) veluticeps.** *Cke. & Mass. Grev. xix., 89.*

Pileus convex, then flattened, depressed in the centre, densely and shortly velvety, bay-brown (3-4 c.m. broad), margin involute. Stem expanded upwards into the pileus, stuffed, rather short (3 c.m. long), smooth, of the same colour as the pileus (5 m.m. thick). Gills rather distant, attenuated behind, and deeply decurrent, orange brown, then umber. Spores orange brown, minutely apiculate at the base ( $12 \times 5 \mu$ ).

Amongst grass on the hillsides. Victoria.

**249. Agaricus (Flammula) ruber.** *Cke. & Mass. Grev.*  
xix., 46.

Pileus fleshy, convex, at length depressed, apparently dry, smooth, even, shining ( $2\frac{1}{2}$  c.m. broad), red, with a tinge of purple; stem equal, hollow, smooth, paler than the pileus (4 c.m. long, 4

m.m. thick). Gills rather broad, not crowded, adnate, with a decurrent tooth, at first coloured like the pileus, then dusted with the ferruginous spores, which are elliptic,  $7 \times 4 \mu$ . Flesh and substance of the gills permanently roseate.

On the ground. Victoria.

**250. *Agaricus (Flammula) xanthophyllus.* Cke. & Mass.**

=*Ag. crociphyllus*, Cke. & Mass. *Grev.* xvi., 1.

Ochraceous yellow. Pileus fleshy, compact, convex, innately squamulose and fibrillose (2-3 in. broad), hard when dry, margin incurved; stem lateral, short (1 in. long, 1 in. thick), curved, thick, striate, nearly of the same colour, solid; gills rather distant, very broad ( $\frac{1}{2}$  in.) with a decurrent tooth, bright yellow. Spores elliptic,  $10 \times 6 \mu$ .

On wood. Victoria.

**251. *Agaricus (Flammula) hyperion.* Cke. & Mass.**

*Grev.* xvi., 72.

Pileus plano-convex, then flattened (3 in. broad), fleshy, golden tawny, then darker, even, smooth; margin incurved, flesh yellowish, stem attenuated downwards, nearly the same colour, sulcately striate, fibrillose, rather scaly (2 in. long,  $\frac{1}{2}$ - $\frac{3}{4}$  in. thick); gills rather distant, ochraceous yellow, arcuate, decurrent. Spores  $16-18 \times 6-8 \mu$ .

On stumps (?). Victoria. (Fig. 24).

**252. *Agaricus (Flammula) avellanus.* Cke. & Mass.**

*Grev.* xvii., 3.

Pileus fleshy, convex, dry, smooth, nut brown (2 in. broad); stem attenuated upwards, striate, paler (2-2 $\frac{1}{2}$  in. long,  $\frac{1}{4}$ - $\frac{1}{3}$  in. thick); gills adnate, broad, scarcely crowded, dusky-ferruginous. Spores elliptic,  $10 \times 6 \mu$ .

On sandy ground. Victoria. Queensland.

**253. *Agaricus (Flammula) Baileyi.* B. & Br. Linn.**

*Trans.* ii., 54. *Sacc. Syll.* 3344.

Orange. Pileus campanulate, then hemispherical, at length expanded, woolly, adult, sprinkled with reddish yellow, mealy particles (4-12 m.m. broad), margin inflexed; stem short, curved, equal, at first floccose, ochraceous, at length dark brown (10-15 m.m. long); gills distant, adnate with a tooth, same colour as the pileus, branched.

On rotten wood. Queensland.

**254. *Agaricus (Flammula) prasinus.* Cke. & Mass.**

*Grev.* xvii., 3.

Pileus fleshy, convex, then expanded, dry, silky, leek-green (1-2 $\frac{1}{2}$  in. diam.); stem equal, straight, stuffed, smooth, even, lemon yellow (1 $\frac{1}{2}$ -2 $\frac{1}{2}$  in. long,  $\frac{1}{4}$ - $\frac{1}{3}$  in. thick); gills adnate, ventricose, yellow, becoming brownish. Spores  $10-12 \times 6 \mu$ .

On the ground. Victoria.

- 255. *Agaricus (Flammula) peregrinus.* Fr. *Epicr.* 191.  
Sacc. *Syll.* 3346.**

Pileus fleshy, nearly plane, ferruginous, squamulose, then smooth, corrugate ( $2\frac{1}{2}$ -5 c.m. broad); gills rather decurrent, ferruginous; stem solid, equal, smooth ( $2\frac{1}{2}$ -4 c.m. long).

On trunks. W. Australia.

## II. LUBRICÆ.

- 256. *Agaricus (Flammula) spumosus.* Fr. *Hym. Eur.* 247.  
Cooke *Illus. t.* 476. Sacc. *Syll. v.*, 3358.**

Pileus fleshy, thin, even, viscid, yellow (4-5 c.m.); stem hollow, equal, slender, fibrillose, yellowish, then discoloured ( $6-7 \times 1$  c.m.); gills adnate, yellow, at length ferruginous. Flesh greenish yellow. Spores  $7-8 \times 4 \mu$ .

In woods. Victoria.

## III. UDÆ.

- 257. *Agaricus (Flammula) fusus.* Batsch. *Elen. f.* 189. Fr. *Hym. Eur.* 247. Cooke *Illus. t.* 433, 434. Sacc. *Syll. v.*, 3363.**

Pileus compact, convex, then expanded, even, rather viscid (6-10 c.m.); stem stuffed, firm, nearly of the same colour, fibrillose-striate, attenuated and somewhat fusiform, rooting ( $6-8 \times 1-2$  c.m.); gills rather decurrent, pallid yellow, becoming ferruginous. Spores  $8-12 \times 5-6 \mu$ .

On the ground and fallen logs. Victoria.

- 258. *Agaricus (Flammula) flavidus.* Schaff. *Icon. t.* 35.  
Fr. *Hym. Eur.* 248. Cooke *Illus. t.* 444. Sacc. *Syll. v.*, 3369.**

Pileus yellow, fleshy, convexo-plane, equal, smooth, moist ( $2\frac{1}{2}$ -6 c.m. broad); stem somewhat hollow, fibrillose, yellow, then ferruginous (7 c.m. long); gills adnate, yellow, then ferruginous. Spores  $6-8 \times 4-5 \mu$ .

On trunks. Victoria. N.S. Wales.

- 259. *Agaricus (Flammula) limonius.* Cke. & Mass. *Grev.* xv., 94. Sacc. *Syll. v.*, 3379.**

Pileus fleshy, convex, then plane, smooth, even, moist, sulphur coloured (2-3 in. broad); stem stuffed, equal, yellowish white, even (2-3 in. long, 7-8 m.m. thick); gills adnate, sulphur coloured, at length watery cinnamon. Spores elliptic,  $15-16 \times 8-9 \mu$ .

On rich soil. Victoria. Cudgong River. Lake Bonney.

- 260. *Agaricus (Flammula) inopus.* Fr. *Hym. Eur.* 249.  
Cooke *Illus. t.* 446. Sacc. *Syll. v.*, 3373.**

Pileus fleshy, thin, convexo-plane, moist, smooth (4-8 c.m. broad); stem fistulose, thin, flexuose, with adpressed fibrils, at length brick-red below (3-5 c.m. long, 5-10 m.m. thick); gills adnate, crowded, linear, yellowish-white, then pallid. Spores  $7-10 \times 4-6 \mu$ .

On pine trunks. Victoria.

- IV. SAPINEI. *Pileus scarcely pelliculose, not viscid, veil fibrillose. Subcæspitose, growing on conifers.*

**261. Agaricus (Flammula) hybridus.** *Fr. Hym. Eur.* 250.  
*Cooke Illus. t.* 615. *Sacc. Syll. v.,* 3382.

Pileus fleshy, hemispherical, then expanded, obtuse, smooth, even, moist (4-5 c.m. broad); stem stuffed, soft, attenuated upwards, tawny (3-4 c.m. long,  $\frac{1}{3}$ -1 c.m. thick), with a whitish veil which forms a ring; gills adnate, rather crowded, pale yellow, then tawny. Spores  $7-9 \times 4-5 \mu$ .

On fir stumps. Victoria.

**262. Agaricus (Flammula) penetrans.** *Fr. Hym. Eur.* 250.  
*Icon. t.* 118, f. 2. *Sacc. Syll.* 3381.

Pileus fleshy, convex, then plane, dry, rather smooth (5 c.m. diam.); stem becoming hollow, silky, then striate, pallid, with a flocculose fugacious white veil; gills adnate, white, then yellowish, spotted with brown; spores  $8-9 \times 4-5 \mu$ .

On wood. Victoria. N.S.Wales. South Australia.

var. **Australis.** *Muell.*

Gills and stem paler than the orange-tawny pileus; spores  $6-7 \times 4 \mu$ .

On soil. Cudgegong River. Victoria.

**263. Agaricus (Flammula) sapineus.** *Fr. Hym. Eur.* 251.  
*Cooke Illus. t.* 447. *Sacc. Syll. v.,* 3385.

Pileus compact, convexo-plane, very obtuse, finely floccoso-squamulose, then cracked ( $2\frac{1}{2}$ -10 c.m. broad); stem rather stuffed, thick, sulcate, rooting (6 c.m. long, 6-11 m.m. thick), yellowish, without a ring; gills adnate, broad, golden-yellow, then tawny cinnamon; spores  $8 \times 5 \mu$ .

On fallen branches, chips. Victoria. N.S.Wales. Queensland.

**264. Agaricus (Flammula) papuensis.** *Cke. & Mass. Grev.*  
xvi., 31.

Pileus compact, convex, then plane, obtuse, scarcely umbonate, smooth, viscid, yellowish, disc darker, soon umber (2 in. broad); stem equal, ascending, solid, clad with a yellowish tomentum (2-3 in. long,  $\frac{1}{4}$  in. thick); gills lanceolate, adnate, rather decurrent, cinnamon; spores elliptic,  $12 \times 6 \mu$ .

On wood. New Guinea.

**265. Agaricus (Flammula) picreus.** *Fr. Hym. Eur.* 251.  
*Cooke Illus. t.* 448. *Sacc. Syll. v.,* 3389.

Pileus rather fleshy, convex, then expanded, even, smooth ( $2\frac{1}{2}$  c.m. broad); stem fistulose, thin, almost umber, attenuated upwards, without a veil, at first pulverulent (6-8 c.m. long, 2-5 m.m. thick); gills adnate, subseceding, crowded, narrow, yellow, then ferruginous; spores  $8-10 \times 5-6 \mu$ .

On trunks of *Encephalartos*, etc. Victoria. Queensland.

**266. Agaricus (Flammula) purpureo-nitens.** *Cke. & Mass. Grev. xv., 94. Sacc. Syll. v., 3393.*

Pileus convex, fleshy, smooth, shining, purple brown, margin even (1 in. broad); stem equal, ascending, fibrillose, solid, paler (2 in. long, 2-3 lines thick), flesh pallid; gills adnexed, rather distant, broad, ferruginous; spores ovate, cinnamon,  $8 \times 5 \mu$ .

On wood. Victoria. Queensland. W. Australia.

*Sub-Genus 27. NAUCORIA. Fr. Syst. Myc. i., 260.*

Veil none, or fugacious, squamulose. Stem cartilaginous, fistulose or spongy. Pileus more or less fleshy, convexo-plane, or conical, margin at first inflexed; gills free or adnate, not decurrent.

**a. GYMNOTI.** *Pileus smooth. Veil none. Spores ferruginous, but not becoming dingy.*

**267. Agaricus (Naucoria) anguineus.** *Fr. Hym. Eur. 255. Fries Icon. t. 122, f. 1. Cooke Illus. t. 455. Sacc. Syll. v., 3412.*

Pileus slightly fleshy, campanulate, then convex, gibbous, smooth, yellowish, tan-coloured, with a silky zone around the margin (2 in. broad); stem rather hollow, brown, and *thickly covered with white fibrillæ* (2-3 in. long by 2-3 lines thick); gills nearly free, crowded, linear, pale-yellow, then ferruginous.

On ground. Queensland.

**268. Agaricus (Naucoria) russus.** *Cke. & Mass. Grev. xv., 94. Sacc. Syll. v., 3427.*

Pileus convex, then flattened, thin, even, smooth, brick-red, margin even (scarcely 1 in. broad); stem equal, nearly of the same colour, whitish tomentose below, fistulose (2 in. long, 2 lines thick), flesh pallid; gills free, ventricose, rather distant, ferruginous; spores elliptic,  $8 \times 4 \mu$ .

On the ground. Victoria.

**269. Agaricus (Naucoria) cerodes.** *Fr. Hym. Eur. 257. Cooke Illus. t. 489b. Sacc. Syll. v., 3435.*

Pileus rather fleshy, convex, then plane, obtuse, orbicular, even (1-2½ c.m. broad), smooth, hygrophanous; stem hollow, equal (2-5 m.m. thick), *naked, yellow, ferruginous at the base*; gills plane, broad, ochraceous cinnamon; spores  $12 \times 6 \mu$ .

On burnt soil. Victoria.

**270. Agaricus (Naucoria) melinoides.** *Fr. Hym. Eur. 257. Cooke Illus. t. 457a. Sacc. Syll. v., 3437.*

Pileus somewhat fleshy, *convexo-plane*, obtusely umbonate, even, smooth, dusky ochraceous when dry (10-25 m.m. broad); stem hollow, slightly thickened, *pruinose above and yellow*, base white (2½-5 c.m. long, 2 m.m. thick); gills adnate, triangular, toothed, honey-coloured. Spores  $10-12 \times 4-5 \mu$ .

Amongst grass. Victoria. Queensland.

- 271. *Agaricus (Naucoria) pusiolus.*** *Fr. Hym. Eur.* 258.  
*Cooke Illus. t. 457b. Sacc. Syll. v., 3440.*

Pileus slightly fleshy, hemispherical, then expanded, obtuse, even, smooth (6-7 m.m. broad); *rather viscid, tawny yellow*; stem fistulose, *filiiform, smooth, yellow, shining* (1 in. or more long); gills adnate, crowded, plane, pallid, then cinnamon. Spores  $8 \times 4 \mu$ .

On the ground. Victoria.

- 272. *Agaricus (Naucoria) nasutus.*** *Kalch. Grev. VIII., 152, pl. 142, f. 9. Sacc. Syll. v., 3426.*

Pileus thin, rather fleshy, with a papillate, elongated, teat-like umbo, sulcate at the margin (12-13 m.m. broad and high), smooth, ochraceous; stem fistulose, equal, twisted, fibrillose, subferruginous (5 c.m. long, 2 m.m. thick), gills emarginate, with a decurrent tooth, rather crowded, broad, ventricose, ferruginous. Spores  $13-14 \times 7-8 \mu$ .

On the ground. N.S.Wales.

- 273. *Agaricus (Naucoria) scolecinus.*** *Fr. Hym. Eur.* 258. *Cooke Illus. t. 491b. Sacc. Syll. v., 3450.*

Pileus rather fleshy ( $\frac{1}{2}$ - $\frac{3}{4}$  in. broad), campanulate, then convex or plane, smooth, margin slightly striate, *ferruginous-bay*; stem fistulose, equal, ferruginous, or *rufous-ferruginous, sprinkled with white meal* (2-3 in. long, 1 line thick); gills adnate, rather distant, pale flesh-colour, then ferruginous, edge flocculose. Spores apiculate,  $9-12 \times 5-6 \mu$ .

On moist ground. Lake Bonney.

- 274. *Agaricus (Naucoria) triscopus.*** *Fries Hym. Eur.* 259. *Cooke Illus. t. 458b.*

Pileus rather fleshy, conical, then hemispherical, obtuse, then convex and umbonate (1 c.m. broad), even, smooth, bay-brown, ochraceous when dry; stem minutely fistulose, *filiiform, smooth, ferruginous* (2 c.m. long), umber at the base; gills adnate, thin, rather crowded, dark ferruginous.

On old wood. Victoria.

- 275. *Agaricus (Naucoria) fraternus,*** *Cke. & Mass. Grev. XVI., 32.*

Cæspitose. Pileus convex, depressed, umbilicate, even, smooth, ( $\frac{1}{2}$  in. broad), tawny ferruginous; stem elongated, thin, ascending, fistulose, smooth, of the same colour (1-2 in. long, 1 line thick); gills rather distant, broad, adnate, ferruginous. Spores elliptic,  $10 \times 6 \mu$ .

On logs. Victoria. (Fig. 25).

- 276. *Agaricus (Naucoria) pediades.*** *Fr. Hym. Eur.* 260. *Cooke Illus. t. 492. Sacc. Syll. v., 3469.*

Pileus somewhat fleshy ( $2\frac{1}{2}$ -6 c.m. broad), convexo plane, obtuse or depressed, dry, at length opaque; stem *medullate, rather*



*flexuous, slightly silky, yellowish, base somewhat bulbous* (8-11 c.m. long, 2-3 m.m. thick); gills adnexed, broad, subdistant, brownish, then dirty cinnamon. Spores  $10-12 \times 4-5 \mu$ .

In pastures. Victoria.

**277. *Agaricus (Naucoria) semiorbicularis.*** *Bull. Champ.* t. 422. *Cooke Illus. t.* 493a. *Sacc. Syll. v.,* 3470.

Pileus rather fleshy ( $2\frac{1}{2}$ -6 c.m. broad), hemispherical, then expanded, even, smooth, rather viscid, at length rivulose; stem slender, tough, almost straight, pallid, *ferruginous, shining, with a separable pith* (8-11 c.m. long, 2-3 m.m. thick); gills adnate, very broad, crowded, pallid, then ferruginous. Spores  $10 \times 5-6 \mu$ .

On lawns and pastures. Victoria. Queensland.

**278. *Agaricus (Naucoria) Drummondii.*** *Berk. Hook. Journ.,* 1845, 46. *Sacc. Syll. v.,* 3484.

Pileus convex, smooth, viscid, very thin (3 m.m. broad); stem fibrillose, mealy above (2 c.m. long, 1 m.m. thick); clothed at the base with white down, which spreads in a round patch over the matrix. Gills clay colour, with a white margin, ventricose, toothed. Spores elliptic.

On rotten wood. Victoria. W. Australia.

**279. *Agaricus (Naucoria) temulentus.*** *Fr. Hym. Eur.* 262. *Cooke Illus. t.* 459. *Sacc. Syll. v.,* 3486.

Pileus rather membranaceous, campanulate, then convex, smooth, hygrophanous, ferruginous, when dry tan colour; margin slightly striate ( $1-2\frac{1}{2}$  c.m. broad); stem *fistulose, thin, tough, polished, flexuous, powdery above* (7-8 c.m. long, 2-3 m.m. thick); gills attenuated behind, adnate, rather distant, lurid umber, then ferruginous. Spores  $12 \times 6 \mu$ .

In moist woods. Victoria. Harkaway Range.

**280. *Agaricus (Naucoria) siparius.*** *Fr. Hym. Eur.* 263. *Cooke Illus. t.* 480b. *Sacc. Syll. v.* 3507.

Pileus rather fleshy, plane (6-11 m.m. broad), obtuse; stem stuffed, pruinose above, clothed, as well as the pileus, *with downy scales* ( $1-2\frac{1}{2}$  c.m. long); gills adnate, broad, rather distant, floccose at the edge.

On soil, fern stems, etc. Victoria.

**281. *Agaricus (Naucoria) Bowmanni.*** *Berk. Linn. Journ.* xiii., p. 128. *Sacc. Syll.* 3506.

Small. Pileus convex, umbilicate, innately floccose and rough (4-9 m.m. broad); stem slender, floccose, becoming smooth (12 m.m. long, 1 m.m. thick); gills shortly adnate, distant, ventricose.

On the ground. Queensland.

***Agaricus (Naucoria) escharoides.*** *Fr. Hym. Eur.* 264. *Cooke Illus. t.* 512b. *Sacc. Syll. v.,* 3574.

Pileus rather fleshy, conico-convex ( $1\frac{1}{2}$  c.m. broad); then expanded, obtuse, squamuloso-furfuraceous, becoming pallid;

stem fistulose, flexuous, with adpressed fibrils, at length smooth and pallid ( $2\frac{1}{2}$  c.m. long); gills fixed, lax, ventricose, pallid clay-colour or cinnamon. Spores  $14-16 \times 7 \mu$ .

On bare ground. Queensland.

**283. Agaricus (Naucoria) frusticola.** Berk. Linn. Journ. XIII., 158. Sacc. Syll. v., 3495.

Densely caespitose; pileus convex, umbilicate, tawny ( $\frac{1}{4}-\frac{1}{2}$  in. across); stem slender, thickened downwards, mealy, and paler (1 in. long,  $\frac{1}{2}-\frac{3}{4}$  line thick); gills ferruginous olive, emarginate, decurrent. Spores  $7 \mu$  long.

On roots of grass, etc. N.S. Wales. S. Australia.

*Sub-Genus 28. GALERA.* Fr. Syst. Myc. i., 264.

Veil none, or fibrillose, stem somewhat cartilaginous, continuous with the hymenophore, tubular. Pileus more or less membranaceous, conical or oval, then expanded, striate, margin at first straight, pressed to the stem. Gills not decurrent.

\* **CONOCEPHALI.** Pileus conic-campanulate, hygrophanous, nearly even, atomate when dry. Stem straight, gills ascending. Veil none.

**284. Agaricus (Galera) tener.** Schæff. Icon. t. 70, f. 6-8. Fr. Hym. Eur. 267. Cooke Illus. t. 461. Sacc. Syll. v., 3537.

Pileus submembranaceous, conico-campanulate, obtuse, hygrophanous (1-3 c.m. broad); stem straight, fragile, rather shining, nearly of the same colour (8-11 c.m. long); gills adnate, crowded, ascending, rather broad, cinnamon. Spores  $11-15 \times 6-10 \mu$ .

In grassy places. Victoria. Tasmania. (Fig. 26).

**285. Agaricus (Galera) peroxydatus.** Berk. Journ. Bot. 1843, 511. Sacc. Syll. 3549.

Pileus campanulate, rather hemispherical, with an apiculiform umbo, membranaceous, rugulose when dry (11 m.m. broad); stem very thin, delicate, rather arched upwards, smooth (4 c.m. long); gills distant, ascending, rather narrow, adnate, not ventricose; spores brick red.

On the ground. Queensland.

**286. Agaricus (Galera) hypnorum.** Batsch. f. 96. Fr. Hym. Eur. 270. Cooke Illus. t. 465. Sacc. Syll. v., 3568.

Pileus membranaceous, campanulate, subpapillate, smooth, striate, hygrophanous (6-14 m.m. broad); stem slender, flexuose, lax, of the same colour, apex pruinose (2-3 c.m. long); gills adnate, rather distant, broad, lax, at length plane, cinnamon-yellow. Spores  $9-12 \times 5-7 \mu$ .

Amongst moss. Victoria. S. Australia.

**287. Agaricus (Galera) minutus.** Quel. Jura. III., 10, t. 1, f. 5. Cooke Illus. t. 466b.

Pileus tawny bistre, tender, campanulate (2-3 m.m.), membranaceous, striate; stem almost capillary (1 c.m.), smooth

tawny, shining, woolly and white at the base; gills adnate, arcuate, as broad as long, moderately crowded, yellowish, then clay-coloured, with edge whitish.

On decayed wood. Victoria.

*Sub-Genus 29. TUBARIA, Smith.*

Stem subcartilaginous, fistulose. Pileus rather membranaceous, often clad with the floccose universal veil. Gills subdecurrent, broadest behind, triangular.

\* *GENUINI. Spores ferruginous.*

**288. Agaricus (Tubaria) furfuraceus.** *Pers. Syn.* 454.  
*Fr. Hym. Eur.* 272. *Cooke Illus. t.* 603. *Sacc. Syll. v.*, 3584.

Pileus somewhat fleshy, convexo-plane, obtuse, then depressed, moist, hygrophanous, at first clothed with *silky evanescent scales*, then naked (2 c.m. broad); stem fistulose, flocculose, rigid, pallid (2-6 c.m. long); gills adnato-decurrent, rather distant, cinnamon-coloured. Spores  $7-9 \times 3-5 \mu$ .

On chips, etc. Victoria. Queensland. Tasmania. Lake Bonney. (Fig. 20).

**289. Agaricus (Tubaria) inquilinus.** *Fr. Hym. Eur.* 274.  
*Cooke Illus. t.* 497. *Sacc. Syll. v.*, 3597.

Pileus submembranaceous, convexo-plane, *smooth*, slightly *striate*, hygrophanous, centre somewhat fleshy ( $1\frac{1}{4}$  c.m. broad); stem fistulose, short, tough, *dark brown*, attenuated downwards ( $2\frac{1}{2}$  c.m. long, 2 m.m. thick); gills adnato-decurrent, *triangular*, convex, scarcely crowded, *clay-coloured*, then *umber*. Spores  $10 \times 6 \mu$ .

On chips. N.S.Wales.

var. **ecbolus.** *Fries Hym. Eur.* 275.

Pileus clay-coloured, stem rooting, gills crowded.

On grass roots. N.S.Wales.

*Sub-Genus 30. CREPIDOTUS. Fr. Sys. Myc. i.*, 272.

Variable in size, irregular, without manifest veil. Pileus excentric, lateral, or resupinate. Spores ferruginous.

**290. Agaricus (Crepidotus) phaeton.** *Cke. & Mass. Grev.* xv., 99.

Pileus submembranaceous, plane, depressed behind, brick-red ( $1\frac{1}{2}$ -2 in. diam.), margin thin, flexuous, faintly striate; stem lateral, elongated, nearly equal, of the same colour, thickened at the base and whitish villose (2 in. long, 2 lines thick); gills linear, somewhat decurrent, cinnamon; spores elliptic,  $8 \times 4 \mu$ .

On the ground (?). Victoria. (Fig. 27).

**291. Agaricus (Crepidotus) palmatus.** *Bull. Champ.* 216.  
*Fr. Hym. Eur.* 275. *Sacc. Syll. v.*, 3598.

Pileus fleshy, compact, convex, then expanded, irregular, smooth, pelliculose, ferruginous (4-8 c.m. broad); stem excentric or lateral,

incurved, firm, smooth, whitish (3-5 c.m. long); gills *fixed to a collar*, ventricose, rather distant, of the same colour. Spores subglobose, 10  $\mu$  diam.

On trunks. Tasmania.

- 292. *Agaricus (Crepidotus) alveolus.*** *Lasch. No. 582. Fr. Hym. Eur. 275. Cooke Illus. t. 499a. Sacc. Syll. v., 3599.*

Pileus fleshy, *soft, lateral*, obovate, then repand, opaque, contracted, and tomentose-villous behind (2-8 c.m. broad); gills determinate, crowded, *broad*, clay-brown. Spores 7-8  $\mu$  long.

On old stumps. Victoria.

- 293. *Agaricus (Crepidotus) mollis.*** *Schæff. Icon. t. 213. Cooke Illus. t. 498. Sacc. Syll. v., 3600.*

Pileus between *subgelatinous and fleshy*, flaccid, even, smooth, becoming pale (2-8 c.m. broad); stem obsolete; gills crowded, decurrent, *linear*, from whitish to watery cinnamon. Spores 8-9  $\times$  5-6  $\mu$ .

On old stumps. Victoria. W. Australia.

- 294. *Agaricus (Crepidotus) globigera.*** *Berk. Linn. Journ. XIII., 158. Sacc. Syll. v., 3610.*

Pileus flabelliform, or kidney-shaped (2-3 c.m. broad), attenuated at the base, soft, smooth. Gills thin, ochraceous. Spores globose, 6  $\mu$  diam.

On wood. Victoria.

- 295. *Agaricus (Crepidotus) hepatochrous.*** *Berk. Hook. Journ. VII., 574. Sacc. Syll. 3602.*

Gregarious. Pileus horizontal, rather fleshy, sinuate, smooth, liver-coloured; stem very short, white, fixed by a discoid base; gills yellow-cinnamon, with a white edge. Spores ovate, ferruginous.

On bark. Tasmania.

- 296. *Agaricus (Crepidotus) interceptus.*** *Berk. Flor. Tasm. t. 181, f. 6. Sacc. Syll. v., 3603.*

Reniform, ochraceous white. Pileus of three strata, the middle one white interposed between two darker ones (25 m.m. broad); stem very short, lateral. Spores 7-8  $\mu$  long.

On bark. Tasmania.

- 297. *Agaricus (Crepidotus) stromaticus.*** *Cke. & Mass. Grev. xv., 94. Sacc. Syll. 3655.*

Pileus tan colour, sessile, thin, flaccid, mealy, resupinate, arising from a white membranaceous floccose stroma (about  $\frac{1}{2}$  in. broad); gills converging to the centre, rather distant, plane, pallid, then cinnamon. Spores globose, rough, 8  $\mu$  diam.

On bark. N.W. Australia.

- 298. *Agaricus (Crepidotus) haustellaris.*** *Fr. Hym. Eur.*  
276. *Sacc. Syll. v.*, 3620.

Pileus rather fleshy, flaccid, lateral, reniform, plane, even, delicately villose, tan coloured (1-1½ c.m. broad); stem distinct, attenuated upwards, villous, white (5-9 m.m. long, 2 m.m. thick); gills determinate, rounded, pallid, then cinnamon.

On branches. Mariatta.

- 299. *Agaricus (Crepidotus) epigæus.*** *Pers. Syn. p.* 484.  
= *Ag. depluens*, *Batsch.*, fig. 122. *Cooke Illus. t.* 516.  
*Sacc. Syll.* 3601.

Pileus reniform, fragile, reddish grey (1-2 c.m.); base villose, whitish; gills distinct, watery rufescent, divergent, pale when dry. Spores oblong, 10  $\mu$  long, even.

On the ground. Victoria.

- 300. *Agaricus (Crepidotus) cassiacolor.*** *Berk. Flor.*  
*Tasm. II.*, 246. *Sacc. Syll.* 3627.

Pileus resupinate (12-18 m.m. broad), affixed behind, mealy, cinnamon; stem very short, white, tomentose; gills rather broad, cinnamon.

On rotten bark. Tasmania.

- 301. *Agaricus (Crepidotus) insidiosus.*** *Berk. Hook. Journ.*  
*VII.*, 574. *Flor. Tasm. II.*, 246. *Sacc. Syll.* 3628.

Pileus at length resupinate, affixed, membranaceous, margin tomentose (18-25 m.m. broad); stem thin, very short; gills rather broad, attenuated behind, adnexed, watery yellow, then umber; spores yellow-brown, ovate.

On bark. Tasmania.

- 302. *Agaricus (Crepidotus) lepton.*** *Berk. Hook. Journ.*  
1845, 46. *Sacc. Syll. v.*, 3641.

Resupinate, then reflexed. Pileus convex, pruinose, tawny-ochre (5 m.m. broad), attached at the vertex by a little down; stem obsolete; gills rather broad, ochraceous, with a white margin. Spores elliptic, with a large nucleus.

On bark. W. Australia.

- 303. *Agaricus (Crepidotus) leptomorphus.*** *Berk. Fl.*  
*Tasm. II.*, 246. *Sacc. Syll.* 3663.

Sessile, fixed at the vertex by a few delicate white threads ( $\frac{1}{4}$  in. across), whitish tomentose; gills ventricose, umber, with a pale edge. Spores broadly elliptic or subglobose, 6  $\mu$ .

On dead wood. Tasmania.

- 304. *Agaricus (Crepidotus) auricula.*** *Berk. Fl. Tasm.*  
246. *Sacc. Syll.* 3665.

Pileus sessile, conchiform, adnate behind, cream coloured (1 in. diam.). Flesh thick, brittle when dry; margin incurved. Gills narrow, pale. Spores lentiform, 4  $\mu$  long.

On dead wood. Tasmania.

**305. Agaricus (Crepidotus) turbidulus.** *Berk. in Herb. Sacc. Syll.* 3664.

Pileus sessile, reniform, smooth, ochraceous; margin even (1 c.m. broad), gills broad, lanceolate, rather distant, umber. Spores subglobose,  $6 \times 5 \mu$ .

On wood. Tasmania.

Series 4. **Pratelli.** *Fr. Epicr.* p. 212. Spores blackish-purple or purplish-brown, rarely fuscous.

*Sub-Genus* 31. **CHITONIA.** *Fr. Hym. Eur.* p. 277.

Universal veil distinct from the pileus. Hymenophore distinct from the stem; gills free.

No Australian species.

*Sub-Genus* 32. **PSALLIOTA.** *Fr. Epicr.* p. 212.

Spores dark, brownish-purple, brown or reddish-purple; veil universal, concrete with the cuticle, and forming a ring on the stem; pileus fleshy; stem distinct from the hymenophore; gills free, rounded behind, white, then pink, afterwards purple-brown.

\* **EDULES.** *Large, fleshy.*

**306. Agaricus (Psalliota) arvensis.** *Schæff. Icon. t.* 310-311. *Fr. Hym. Eur.* 278. *Cooke Illus. t.* 523. *Sacc. Syll.* 4039.

Pileus fleshy, conic-campanulate, then expanded, at first floccose-farinose, then nearly smooth, even or cracked (3 to 10 in. broad); stem hollow, with a floccose pith (4-6 in. long,  $\frac{1}{2}$ -1 in. thick), ring pendulous, broad, double, the outer split in rays; gills free, broader in front, dirty white, then reddish-brown. Spores  $9-11 \times 6 \mu$ .

In meadows, etc. Victoria. N.S.Wales. Tasmania.

**307. Agaricus (Psalliota) campestris.** *Linn. Fr. Hym. Eur.* 279. *Cooke Illus. t.* 526.

Pileus fleshy (6-14 c.m. broad), convexo-plane, dry, silky, floccose or squamulose; stem stuffed, even, white (6-8 c.m. long, 1-2 c.m. thick), ring medial, somewhat torn; gills free, approximate, ventricose, subdeliquescent, flesh-coloured, then brown. Spores  $7-9 \times 6 \mu$ .

In rich pastures. Victoria. Queensland. N.S.Wales. S. Australia. Tasmania.

*var. silvicola.* *Vitt. Cooke Illus. t.* 529.

Pileus smooth, shining; stem elongated, somewhat bulbous.

In woods. Victoria.

**308. Agaricus (Psalliota) silvaticus.** *Schæff. Icon. t.* 242. *Sacc. Syll.* v., 4061. *Fr. Hym. Eur.* 280. *Cooke Illus. t.* 530.

Pileus fleshy, thin, campanulate, then expanded (8 c.m. broad), gibbous, fibrillose or squamulose; ring simple, distant; stem hollow, unequal, whitish (8 c.m. long,  $1\frac{1}{4}$  c.m. thick); gills free, crowded, rather thin, dry, reddish, then brown. Spores  $6-8 \times 4 \mu$ .

In woods. Victoria.

**309. Agaricus (Psalliota) versipes.** Berk. & Br. Linn. Trans. II., 54. Sacc. Syll. 4081.

Pileus white, smooth, like chamois leather, depressed in the centre, tough (5-8 in. across); stem floccosely stuffed, attenuated at the base (6 in. long,  $1\frac{1}{2}$  in. thick), ring broad; gills free, fasciculate at the base, at first white, then salmon colour. Spores 7-10  $\mu$  diam.

At the roots of bamboos. Queensland.

\*\* MINORES. *Pileus thinly fleshy.*

**310. Agaricus (Psalliota) elatior.** Cke. & Mass. Grev. XVIII., 3.

Pileus thinly fleshy, convex, then plane, umbonate ( $1\frac{1}{2}$  in. diam.), brown, covered with adpressed darker scales; stem erect, cylindrical, elongated (3-5 in. long, 2 lines thick), silky, whitish, thickened at the base; ring superior, evanescent; gills free, rather crowded, ventricose, purple brown. Spores minute,  $3 \times 2 \mu$ .

On the ground. Victoria. (Fig. 28).

*Sub-Genus 33. PILOSACE. Fr.*

Resembling *Psalliota*, but destitute of a ring (at present not known in Australia).

*Sub-Genus 34. STROPHARIA. Fr. Monog. Hymen. 1., p. 409.*

Hymenophore continuous with the stem. Veil annulate; gills more or less adnate. Spores intense bright purple-brown, brown or slate-colour.

a. VISCIPELLES. *Pileus with a smooth, or squamose, often viscid, pellicle.*

\* MUNDI. *Not growing on dung.*

**311. Agaricus (Stropharia) coronillus.** Bull. Champ. t. 597. Cooke Illus. t. 535. Sacc. Syll. v., 4129.

Pileus fleshy, hemispherical, then flattened, convex, even, rather viscid, ochraceous, fulvous, growing pale, margin at first whitish, floccose (3-5 c.m.); stem white, stuffed, then fistulose, fibrillose, attenuated downwards, base equal or bulbillose (4-5 c.m. long, 3-5 m.m. thick); ring adhering to the stem, median, sulcato-plicate; flesh white; odour somewhat of radishes; gills crowded, sinuately adnate, whitish, then purple-violet, at length becoming blackish, edge whitish and pruinose under a lens. Spores 8-10  $\times$  5  $\mu$ .

By waysides. Victoria. (Fig. 29).

**312. Agaricus (Stropharia) squamosus.** Fr. Hym. Eur. 285. Cooke Illus. t. 553. Sacc. Syll. v., 4124.

Pileus fleshy, thin, convexo-plane, subviscid, yellowish tawny, sprinkled with superficial concentric scales; stem subfistulose, slender, villosa-squamose below the distant ring; gills adnate, crowded, blackish, with a whitish edge. Spores 10-14  $\times$  6 $\frac{1}{2}$ -7  $\mu$ .

In woods. Victoria. N.S. Wales.

**\*\* MERDARI.** *Ring often incomplete.*

- 313. Agaricus (Stropharia) semiglobatus.** *Batsch. Elen. f. 110. Fr. Hym. Eur. 287. Cooke Illus. t. 539. Sacc. Syll. v., 4151.*

Pileus somewhat fleshy, hemispherical, even, yellowish (2-6 c.m. broad); stem fistulose, slender, straight (8-12 c.m. long), *smooth*, *glutinous*, yellowish; veil abrupt; gills adnate, broad, plane, clouded with black. Spores 13-14  $\times$  8-9  $\mu$ .

On dung. Victoria. N.S. Wales. W. Australia. S. Australia. Queensland. Tasmania.

- 314. Agaricus (Stropharia) merdarius.** *Fr. Hym. Eur. 286. Cooke Illus. t. 537.*

Gregarious. Pileus convex, then plane, obtuse, *smooth*, *moist*, *hygrophanous* (1-2 c.m.), stem hollow, tough, short, flocculose, pallid when dry (1-3 c.m. high); ring torn, fugacious; gills adnate, broad, yellowish, then umber.

Amongst grass. Victoria.

*Sub-Genus 35. HYPHOLOMA, Fr. S. M. I., p. 287.*

Hymenophore continuous with the stem, veil interwoven in a web, adhering in fragments to the margin of the pileus. Gills adnate or sinuate. Spores brownish-purple, sometimes intense purple, almost black.

**\* FASCICULARES.**

- 315. Agaricus (Hypholoma) fascicularis.** *Hudson Fl. Angl. Fr. Hym. Eur. 212. Cooke Illus. t. 561. Sacc. Syll. v., 4178.*

Pileus fleshy, thin, subumbonate, smooth, yellowish (1-5 c.m. broad); stem hollow, thin, fibrillose, flexuose (5-24 c.m. long, 4-6 m.m. thick), *flesh yellow*; gills adnate, much crowded, linear, subdeliquescent, *sulphur-coloured, then greenish*. Spores 6-7  $\times$  4  $\mu$ .

On old stumps, etc. Victoria. S. Australia. Tasmania.

- 316. Agaricus (Hypholoma) dispersus.** *Fr. Hym. Eur. 292. Cooke Illus. t. 586. Sacc. Syll. v., 4182.*

Pileus somewhat fleshy, campanulate, then expanded, obtuse, even (2-3 c.m. broad), margin silky from the veil; stem subfistulose, thin, tough, fibrillose or silky, base brownish (5-8 c.m. long, 2-3 m.m. thick); gills adnate, thin, *subventricose, crowded, pallid straw-colour*, then clouded. Spores 12-14  $\times$  6  $\mu$ .

On stumps, and on the ground. W. Australia. S. Australia. Tasmania.

**\*\* FLOCCULOSI.**

- 317. Agaricus (Hypholoma) adustus.** *C. & M. Grev. xviii., 3.*

Pileus fleshy, convex, obtuse, dark brown, variegated with darker innate scales (2 in. broad), stem equal, paler, smooth (1½-2 in. long, ¼ in. thick), *yellowish* within, stuffed; gills adnate, crowded, dry, livid, then dark brown, becoming black. Spores 7-8  $\times$  4-5  $\mu$ .

On the ground. Queensland. (Fig. 30).



## \* \* APPENDICULATI.

- 318. Agaricus (Hypholoma) Candollianus.** *Fr. Hym. Eur.* 295. *Cooke Illus. t.* 546. *Sacc. Syll. v.,* 4212.

Pileus somewhat fleshy, campanulate or convex, then expanded (5-11 c.m. broad), obtuse, smooth, hygrophanous; stem hollow, fragile, *subfibrillose*, white, apex striate (8 c.m. long, 4-8 m.m. thick); gills rounded behind, adnexed, crowded, *violet*, then brownish cinnamon; spores  $8 \times 4 \mu$ .

On dead stumps. Cudgegong River. Victoria.

*Sub-Genus.* 36. PSILOCYBE. *Fr. S. M. I., p.* 289.

Veil not manifest, at least not interwoven; stem rather cartilaginous, rigid or tough, tubular, hollow or stuffed, often rooting; pileus more or less fleshy, smooth; margin at first incurved; gills becoming brownish or purplish.

## \* TENACES.

- 319. Agaricus (Psilocybe) ericæus.** *Pers. Syn. p.* 413. *Fr. Hym. Eur.* 298. *Cooke Illus. t.* 568. *Sacc. Syll. v.,* 4235.

Pileus fleshy, tough, conical, then convex, at length plane, even, smooth (2-3 c.m. broad), rather *viscid when moist*, shining when dry; stem somewhat hollow, elongated, tough, pallid (8-11 c.m. long); gills adnate, broad, plane, pallid, then *black*; spores  $8-10 \times 5 \mu$ .

In exposed pastures, after rain. Victoria. W. Australia.

- 320. Agaricus (Psilocybe) comptus.** *B. & Br. Ann. N. H.* 917. *Fr. Hym. Eur.* 300. *Cooke Illus. t.* 589a. *Sacc. Syll. v.,* 4259.

Pileus between conic and campanulate, at length expanded ( $2\frac{1}{2}$ -4 c.m. broad), pallid, then pale ochraceous, *striate*, having scattered shining spots; margin subcrenulate; stem flexuous, shining, silky, smooth (5 c.m. long, 2-3 m.m. thick); gills distant, ventricose, adnate, *rosy-umber*.

In woods. Victoria.

## \*\* RIGIDI.

- 321. Agaricus (Psilocybe) spadiceus.** *Schæff. Icon. t.* 60, *f.* 46. *Fr. Hym. Eur.* 302. *Cooke Illus. t.* 610. *Sacc. Syll. v.,* 4267.

Rigid; pileus fleshy, convexo-plane, obtuse, *even, moist, hygrophanous* (6-11 c.m. broad); stem hollow, tough, pallid, apex even (3-11 c.m. long); gills rounded behind, adnexed, dry, crowded, whitish, then *rosy-brown*; spores  $8-9 \times 4-5 \mu$ .

On dead stumps, ground, etc., in woods. Victoria. Tasmania.

- 322. Agaricus (Psilocybe) cernuus.** *Müll. in Fl. Dan. t.* 1008. *Fr. Hym. Eur. p.* 303. *Cooke Illus. t.* 574. *Sacc. Syll. v.,* 4269.

Pileus somewhat fleshy, campanulate, convex, then expanded, smooth, hygrophanous, wrinkled when dry (1-3 c.m. broad); stem

fistulose, flexuose, smooth, white, apex even, pruinose (6 c.m. long, 2-3 m.m. thick); gills *adnate*, subventricose, scarcely crowded, *whitish-cinereous*, then brownish-black; spores  $7-10 \times 5-7 \mu$ .

On chips, decayed wood, etc. Victoria.

**323. *Agaricus (Psilocybe) foenisecii* (Pers.). Fr. Hym. Eur. 303. Cooke Illus. t. 590. Sacc. Syll. v., 4275.**

Pileus somewhat fleshy, campanulate, then expanded, obtuse ( $2\frac{1}{2}$ -5 c.m. broad), becoming dry; stem fistulose, not rooting, *pallid rufous*, even, *smooth* (5-8 c.m. long, 3 m.m. thick); gills *adnate*, ventricose (as if broadly emarginate), scarcely crowded, brownish-umber; spores  $10-12 \times 6-7 \mu$ .

Amongst grass. Lake Bonney.

**324. *Agaricus (Psilocybe) Ceres*. Cke. & Mass. Grev. xvi., 72.**

Pileus convex, at length expanded, scarcely umbonate, thin, even, smooth, brick-red (about 1 in. broad); stem elongated (4 in.), fibrillose, stuffed, ochraceous, tomentose downwards (2-3 lines thick); gills crowded, deeply sinuate, ventricose, cinereous, cloudy, becoming very dark brown; spores elliptic,  $14-16 \times 6-8 \mu$ .

On the ground. Victoria. (Fig. 31).

*Sub-Genus 37. DECONICA. Smith.*

Gills decurrent. Otherwise as in *Psilocybe*.

**325. *Agaricus (Deconica) atrofufus*. Schæff. t. 234. Fr. Hym. Eur. p. 300. Cooke Illus. t. 571. Sacc. Syll. 4293.**

Pileus rather fleshy, hemispherical, convex (8-18 m.m. broad), *obtuse, smooth, slightly striate at the margin*, discoloured when dry, even; stem hollow, thin, equal, pallid bay ( $2\frac{1}{2}$ -5 c.m. long); gills rather decurrent, broad, plane, umber; spores  $10-12 \times 6 \mu$ .

On the ground in woods. W. Australia.

**326. *Agaricus (Deconica) nucisedus*. Fr. Hym. Eur. p. 300. Cooke Illus. t. 609b.**

Pileus rather fleshy, convex, obsoletely umbonate, yellowish, even, *silky when dry*; stem fistulose (1-2 in. long), pallid, *attenuated upwards*, brownish, downy; gills *adnate*, broad, plane, brown, then dark umber.

On chips. Queensland.

*Sub-Genus 38. PSATHYRA. Fr. Epicr. p. 231.*

Veil none, or only universal, floccose-fibrillose; stem rather cartilaginous, fistulose, polished, fragile; pileus conical or campanulate, membranaceous; margin at first straight, adpressed to the stem; gills purplish or brownish, slender, fragile, hygrophanous.

## \* CONOPILEI.

- 327. Agaricus (Psathyra) conopileus.** *Fr. Hym. Eur. p. 304. Cooke Illus. t. 575.*

Pileus submembranaceous, campanulate, *even*, smooth, *growing pale*; stem tall, attenuated upwards, smooth, silvery-shining; gills slightly adnexed, crowded, brownish purple.

On the ground. Gembrook Range.

- 328. Agaricus (Psathyra) Sonderianus.** *Berk. Linn. Journ. XIII., 159. Sacc. Syll. v., 4314.*

Pileus acutely convex, above pale and dirty yellowish ( $2\frac{1}{2}$  c.m. broad); margin entire; stem white, silky (6 c.m. long, 4 m.m. thick), with a white filamentose mycelium; gills pale.

On the ground. S. Australia.

## \*\* OBTUSATI.

- 329. Agaricus (Psathyra) obtusatus.** *Fr. Hym. Eur. p. 306. Cooke Illus. t. 593. Sacc. Syll. v., 4320.*

Pileus submembranaceous, conical, campanulate, then expanded (2 c.m. broad), obtuse, smooth, *wrinkled, hygrophanous, rather shining*; stem somewhat rigid, equal, even, nearly naked, pallid, incurved at the base (5 c.m. long, 2-5 m.m. thick); gills adnate, subventricose, pallid, then umber; spores  $7-9 \times 4-6 \mu$ .

On oak trunks and on the ground. Victoria.

## \*\*\* FIBRILLOSI.

- 330. Agaricus (Psathyra) fatuus.** *Fr. Hym. Eur. p. 308. Cooke Illus. t. 595. Sacc. Syll. v., 4344.*

Pileus somewhat membranaceous, ovate-campanulate, then expanded, *rugose, at first fibrillose*, then smooth; stem slender, *becoming smooth*, white, striate and mealy at the apex; gills adnate, crowded, linear, whitish, then brown; spores  $12-13 \times 6-7 \mu$ .

In gardens, etc. (Fig. 32).

- 331. Agaricus (Psathyra) gossypinus.** *Fr. Hym. Eur. 309. Cooke Illus. t. 612a. Sacc. Syll. v., 4349.*

Pileus submembranaceous, campanulate, then expanded, *tomentose, becoming smooth* (8 c.m. broad); margin striate; stem tomentose, whitish (5 c.m. long); gills adnexed, ventricose, white, then brownish-black; spores  $10-12 \times 6 \mu$ .

On the ground. Queensland.

Series 5. **Coprinarii.** *Fr. Epicr. p. 234.* Spores black.

Sub-Genus 39. PANÆOLUS. *Fr. Epicr. 234.*

Veil interwoven, sometimes wanting; stem polished, rather firm; pileus somewhat fleshy, viscid when moist, shining when dry, *never striated, the margin exceeding the variegated gills*; gills clouded; spores black, oval, smooth.

\* *Pileus viscid, shining when dry.*

**332. Agaricus (Panæolus) ovatus.** *Cke. & Mass. Grev.*  
XVIII., 4.

Pileus rather fleshy, ovate, obtuse, opaque, at length cracked, white; margin a long time incurved ( $1\frac{1}{2}$ -2 in. diam.); stem erect, equal, firm, stuffed (4-6 in. long), thickened at the base, silky, white; gills grey, then blackish, affixed, rather crowded, somewhat broad; spores  $14-15 \times 10 \mu$ .

On manure. Victoria.

**333. Agaricus (Panæolus) eburneus.** *C. & M. Grev.*  
XVIII., 4.

Pileus rather fleshy, between convex and campanulate, obtuse, even, ivory-white, shining (1-2 in. broad); stem fragile, erect, elongated, straight, equal, shining white, at length hollow, without ring (4-6 in. long, 2 lines thick); gills ventricose, crowded, adnate, turning black; spores elliptic, attenuated at the end,  $15 \times 9 \mu$ .

On dung. Queensland.

**334. Agaricus (Panæolus) fimiputris.** *Bull. Champ. t. 66.*  
*Fr. Hym. Eur. 310. Cooke Illus. t. 626. Sacc. Syll. v., 4561.*

Pileus submembranaceous, conical, then expanded, somewhat gibbous, even, viscid ( $2\frac{1}{2}$ -6 c.m. broad); stem slender, equal, smooth, pallid (5-11 c.m. long); annular zone marked; gills fixed, livid black. Spores  $8-9 \times 7 \mu$ .

On dung, etc. Victoria.

**335. Agaricus (Panæolus) phalænarum.** *Fr. Hym. Eur. 301.*  
*Cooke Illus. t. 625. Sacc. Syll. v., 4536.*

Pileus rather fleshy, campanulate-convex, obtuse, even, smooth, viscid ( $2\frac{1}{2}$  c.m. broad); veil appendiculate, fugacious; stem equal, rather firm, almost naked, pallid rufescent (5 c.m. long); gills adnexed, broad, cinereous black. Spores  $14-15 \times 7-8 \mu$ .

On dung. Victoria.

*\*\* Pileus opaque when moist, when dry subflocculose.*

**336. Agaricus (Panæolus) retirugis.** *Batsch. Epic. f. 91.*  
*Fr. Hym. Eur. 310. Cooke Illus. t. 627. Sacc. Syll. v., 4539.*

Pileus somewhat fleshy, globose, then hemispherical, subumbonate, reticulated with raised ribs, sprinkled with opaque atoms; veil torn, appendiculate; stem equal, pruinose, pinkish purple; gills fixed, ascending, cinereous black. Spores  $15-20 \times 8-9 \mu$ .

On dung. Victoria.

**337. Agaricus (Panæolus) veluticeps.** *Cke. & Mass. Grev.*  
XVIII., 4.

Pileus convex or campanulate, obtuse ( $\frac{1}{2}$ - $\frac{1}{3}$  in. across), velvety, grey; margin smooth, brown; stem elongated (3-4 in.), slender, fistulose, smooth, silvery grey; gills adnate, rather crowded, ventricose, becoming black. Spores elliptical, acuminate,  $14-15 \times 10 \mu$ .

In garden amongst grass. Queensland. (Fig. 33).

- 338. *Agaricus (Panæolus) campanulatus.*** *Linn. Fries. Hym. Eur.* 311. *Cooke Illus. t.* 629. *Sacc Syll. v.,* 4544.

Pileus somewhat fleshy, campanulate, dry, even, smooth, somewhat shining ( $1-2\frac{1}{2}$  c.m. broad); stem equal, straight, *rufous*, *striate above*, *powdered with black* (8 c.m. long, 2-5 m.m. thick); gills fixed, ascending, variegated with grey and black. Spores  $15-18 \times 9-13 \mu$ .

On rich soil. Victoria.

- 339. *Agaricus (Panæolus) papilionaceus.*** *Bull. Champ. t.* 561, f. 2. *Fr. Hym. Eur.* 311. *Cooke Illus. t.* 630. *Sacc. Syll. v.,* 4547.

Pileus somewhat fleshy, hemispherical, smooth, *when dry rimoso-squamose* ( $1-2\frac{1}{2}$  c.m. broad); stem equal, even, whitish, powdered with white above (8 c.m. long, 2-5 m.m. thick); gills *broadly adnate*, *very wide*, at length plane, blackish. Spores  $15-18 \times 7-8 \mu$ .

On rich soil, dung, etc. Victoria. S. Australia. Harkaway Range.

- 340. *Agaricus (Panæolus) fimicola.*** *Fr. Hym. Eur.* 312. *Cooke Illus. t.* 642b. *Sacc. Syll. v.,* 4555.

Pileus somewhat fleshy, campanulato-convex ( $1-2\frac{1}{2}$  c.m. broad), *obtuse*, smooth, opaque; marked near the margin with a *narrow brown zone*; stem fragile, elongated, equal, pallid, pruinose above (5-11 c.m. long, 2 m.m. thick); gills adnate, broad, variegated with grey and brown. Spores  $16 \times 8-10 \mu$ .

On dung, rich pastures, etc. Victoria. Queensland.

*Sub-Genus.* 40. PSATHYRELLA. *Fr. Epicr.* 237.

Veil inconspicuous, not interwoven; pileus membranaceous, striated, margin straight, adpressed to the stem, *not exceeding the gills*; gills adnate or free. Spores black.

\* *Stem straight, smooth.*

- 341. *Agaricus (Psathyrella) hiascens.*** *Fr. Hym. Eur.* 314. *Cooke Illus. t.* 635. *Sacc. Syll. v.,* 4572.

Pileus membranaceous, campanulate, smooth, *fisso-sulcate*; disc even ( $2\frac{1}{2}$  c.m. broad); stem straight, rigid, brittle, smooth, white (6-10 c.m. long); gills adnate, linear, rather distant, acute in front, *pallid, then black*. Spores  $10-12 \times 7-10 \mu$ .

On the ground. Queensland. (Fig. 34).

- 342. *Agaricus (Psathyrella) trepidus.*** *Fr. Hym. Eur.* 314. *Cooke Illus. t.* 655a. *Sacc. Syll. v.,* 4575.

Pileus membranaceous, campanulate, obtuse, smooth, very densely striate, hygrophanous ( $2\frac{1}{2}$  c.m. broad), disc even; stem nearly straight, smooth, hyaline, and pellucid (8 c.m. long); gills adnate, *ventricose*, *crowded*, thin, sooty-black. Spores plum-shaped,  $12 \mu$  long.

On the ground. Victoria.

**343. Agaricus (Psathyrella) crenatus.** *Lasch. in Fr. Hym. Eur.* 315. *Cooke Illus. Sacc. Syll.* v., 4595.

Pileus membranaceous, hemispherical, sulcate, atomate, hygrophanous (1-2½ c.m. broad); *margin crenate*; stem slightly curved, fragile, smooth, whitish, *striate above and mealy* (3-4 c.m. long, 2-3 m.m. thick); gills adnate, somewhat ventricose, from yellowish brown becoming black. Spores 14-15  $\mu$  long.

On grassy ground. Lake Bonney.

**344. Agaricus (Psathyrella) disseminatus.** *Fr. Hym. Eur.* 316. *Cooke Illus. t.* 657b. *Sacc. Syll.* v., 4597.

Pileus membranaceous, ovato-campanulate, *furfuraceous*, then naked, sulcato-plicate, entire, discoloured (8 m.m. broad); stem *lax*, subflexuose, fragile, at first mealy, then smooth (2½ c.m. long); gills adnate, broadly linear, whitish cinereous, then black. Spores 6-10  $\times$  3-5  $\mu$ .

About trunks of trees, and on the ground. Victoria. Queensland. W. Australia. Tasmania.

GENUS 2. **COPRINUS.** *Fr. Epicr. p.* 241.

Hymenophore distinct from the stem, gills membranaceous, at first crowded, coherent, scissile, at length deliquescing into a black fluid, trama none. Spores even, black.

TRIBE 1. *Pelliculosi.* Cuticle fleshy, or membranaceous.

**345. Coprinus comatus.** *Fr. Hym. Eur.* 320. *Cooke Illus. t.* 658. *Sacc. Syll.* 4374.

Pileus rather fleshy, *cylindrical*, then expanded (8-10 c.m. high, 5 c.m. broad), even, soon torn into *broad, adpressed, scattered scales*; stem hollow, fibrillose, bulb solid, rooting (14 c.m. long, 1¼ c.m. thick); *ring moveable*; gills free, linear, white, then purplish, at length black. Spores 14  $\times$  8  $\mu$ .

Sides of roads, pastures. Esculent. Victoria.

**346. Coprinus picaceus.** *Fr. Hym. Eur.* 323. *Cooke Illus. t.* 665. *Sacc. Syll.* 4394.

Pileus membranaceous, ovato-campanulate, striate (6 c.m. high), variegated with *broad, white, superficial scales*; stem hollow (16 c.m. long, 1-1½ c.m. thick), bulbous, not rooting, fragile, smooth; gills free, ventricose, cinereous-black. Spores 13-14  $\times$  8-9  $\mu$ .

On roadsides, etc. Queensland.

**347. Coprinus fimetarius.** *Fr. Hym. Eur.* 324. *Sacc. Syll.* 4404.

Pileus submembranaceous, clavate, then conical, soon torn and revolute, at first rough with *white floccose scales*, then naked, longitudinally rimoso-sulcate, even at the apex; stem *squamulose*, thickened at the base, solid; gills free, lanceolate, then linear and flexuose, black. Spores 12  $\times$  6  $\mu$ .

On dung heaps. Queensland.

*var. macrorhizus. Pers. Syn. 398. Cooke Illus. t. 670.*

Pileus squamose; stem shorter, rather marginately bulbous, rooting, villous. Spores  $12-14 \times 9 \mu$ .

Lake Bonney.

**348. *Coprinus tomentosus.* Fr. Hym. Eur. 325. Cooke Illus. t. 672a. Sacc. Syll. 4406.**

Pileus submembranaceous, cylindrical, then conical, striate, floccoso-tomentose, then longitudinally cracked (3-4 c.m. high, 2 c.m. broad); stem hollow, rather short (5-8 c.m. long, 5-7 m.m. thick), equal, velvety; gills free, linear, brownish, then black. Spores  $18 \times 9 \mu$ .

On dung and in rich pastures. Queensland.

**348 bis. *Coprinus niveus.* Fr. Hym. Eur. 325. Cooke Illus. t. 672b.**

Pileus submembranaceous, oval, then campanulate and expanded, floccoso-squamulose, almost persistently clad with dense white down, stem fistulose, equal, villous, white; gills subadnate, narrow, blackish. Spores  $16 \times 12 \mu$ .

On horse dung. Victoria.

**349. *Coprinus micaceus.* Fr. Hym. Eur. 325. Cooke Illus. t. 673. Sacc. Syll. 4416.**

Pileus submembranaceous, oval, then campanulate (2-4 c.m. broad), subrepand, striate, discoid, sprinkled with fugacious, micaceous granules, at length naked, rimoso-sulcate; stem hollow, silky, even, whitish (8-10 c.m. long, 5 m.m. thick), gills adnexed, lanceolate, whitish, brown to the middle, then turning black. Spores  $8 \times 6 \mu$ .

About old stumps. Victoria. S. Australia.

**350. *Coprinus truncorum.* Schæff. Fr. Hym. Eur. 326. Sacc. Syll. v., 4420.**

Pileus membranaceous, globose, then campanulate, at first densely micaceous, then striate and torn, deliquescent (3 c.m. broad and high), disc even; stem fistulose, smooth (8-11 c.m. long), gills free, approximate, linear, rosy, then black. Spores  $10-14 \times 5-6 \mu$ .

On wood. Queensland.

**351. *Coprinus deliquescens.* Bull. Champ. t. 558, f. 1. Fr. Hym. Eur. 327. Cooke Illus. t. 678. Sacc. Syll. 4429.**

Pileus submembranaceous, ovato-campanulate, then expanded (8-11 c.m. broad, 4-5 c.m. high), subrepand, broadly striate, smooth, top studded with innate papillæ, stem hollow, corticate, smooth (11 c.m. long, 4-8 m.m. thick), at length remote, linear, lurid black. Spores  $12 \times 8 \mu$ .

On old stumps. Queensland.

TRIBE 2. *Veliformes*. Pileus thin, without pellicle, at length splitting, sulcate. Stem thin, fistulose; gills wasting into thin lines.

**352. *Coprinus stercorarius*.** *Fr. Hym. Eur.* 330. *Cooke Illus. t.* 685a. *Sacc. Syll.* 4465.

Pileus very thin, *ovate*, then campanulate, covered with a dense white micaceous meal then expanded ( $2\frac{1}{2}$  c.m. broad, 2 c.m. high); margin striate, stem at first ovately bulbous, then elongated, attenuated, at first pruinose, white; gills adnexed, ventricose, black. Spores  $14-15 \times 8 \mu$ .

On rich soil and dung. Victoria. N.S.Wales. Queensland. Tasmania.

**353. *Coprinus murinus*.** *Kalch. Grev. VIII., t.* 142, *f.* 10. *Sacc. Syll.* 4477.

Small. Pileus submembranaceous, conically campanulate (scarcely 1 c.m. high), with a prominent papilla at the apex, sprinkled with white persistent flocci, scarcely striate, grey. Stem short (1-3 c.m.), thin, slightly attenuated upwards, white, gills rather broad, black.

On the ground. Victoria. N.S.Wales.

**354. *Coprinus ephemerus*.** *Fr. Hym. Eur.* 331. *Cooke Illus. t.* 685b. *Sacc. Syll.* 4480.

Pileus very thin, *ovate*, then campanulate, splitting, radiato-sulcate, subfurfuraceous (6-18 m.m. broad); disc elevated, even, rufescent; stem slender ( $2\frac{1}{2}$ -5 c.m. long, 2-3 m.m. thick); equal, pellucid, smooth; gills reaching the stem, linear, whitish, then brown and black. Spores  $17 \times 10 \mu$ .

On dung hills. Queensland.

**355. *Coprinus plicatilis*.** *Curt. Fl. Lond. t.* 200. *Fr. Hym. Eur.* 331. *Cooke Illus. t.* 686a. *Sacc. Syll.* 4490.

Pileus very thin, oval-cylindrical, then expanded ( $1-2\frac{1}{2}$  c.m. broad), splitting, sulcato-plicate, somewhat smooth; disc broad, at length depressed, even; stem equal, smooth, white (2-8 c.m. long); gills adnate to a distinct collar, distant, greyish black. Spores  $12-14 \times 8-10 \mu$ .

In pastures. Victoria. Queensland. N.S.Wales. (Fig. 35).

### GENUS 3. **BOLBITIUS.** *Fries.*

Hymenophore almost separate, universal veil none, partial veil in many cases obsolete; gills membranaceous, soft, dissolving, powdery with the rusty oval spores.

**356. *Bolbitius fragilis*.** *Fr. Hym. Eur.* 334. *Cooke Illus. t.* 720a. *Sacc. Syll.* 4355.

Pileus submembranaceous, viscid, pellucid (1-2 c.m. broad), margin striate, disc subumbonate; stem attenuated, naked, smooth,



yellow (8 c.m. long); gills attenuated, adnexed, yellowish, then pale cinnamon. Spores  $14-15 \times 8-9 \mu$ .

On dung. Victoria. Queensland. W. Australia.

**357. *Bolbitius titubans*.** *Bull. Fr. Hym. Eur.* 334. *Cooke Illus. t.* 690. *Sacc. Syll.* 4358.

Pileus membranaceous, ovate-campanulate, then expanded ( $2\frac{1}{2}$  c.m. broad), yellow, discoid; stem slender, straight, shining, yellowish (11-14 c.m. long, 2-4 m.m. thick); gills slightly adnexed, pallid, then purplish or fleshy-brown (salmon-coloured, B.). Spores  $12 \times 8 \mu$ .

Amongst grass. Victoria. (Fig. 36).

**358. *Bolbitius conocephalus*.** *Bull. t.* 563, *f.* 1. *Fr. Hym. Eur.* 334. *Sacc. Syll.* 4357. *Cooke Illus. t.* 1160.

Pileus membranaceous, conical, hygrophanous, disc even, rather viscid, margin striate (3 c.m. broad); stem fistulose, equal, smooth, shining, white (8-9 c.m. long, 3-4 m.m. thick); gills free, ventricose, tawny, then ferruginous. Spores  $18 \times 9-10 \mu$ .

On moist ground. Victoria. N.S.Wales.

GENUS 4. **HIATULA.** *Fries Novæ Symbolæ*, II.

Pileus very thin, without distinct pellicle, formed from the union of the back of the gills, splitting when expanded, as in very thin species of *Coprinus*, but not deliquescent, and spores white.

**359. *Hiatula Wynnii*.** *B. & Br. Ann. N. H. No.* 1772. *Cooke Illus t.* 688. *Sacc. Syll.* 1168.

White. Pileus tender, striate, pulverulent, darker in the centre ( $1-1\frac{1}{2}$  in. across); stem slender, striate (1 in. high, 1 line thick); gills rather broad, rough.

On the ground. Harkaway Range.

GENUS 5. **CORTINARIUS.** *Fries.*

Veil like a cobweb, distinct from the cuticle of the pileus; superficial stem confluent with the hymenophore; gills persistent, dry, becoming discoloured, powdered with the slowly falling spores; trama fibrillose; spores oblong, rusty ochre.

TRIBE 1. *Phlegmacium*. Partial veil web-like; pileus equally fleshy, viscid; stem firm, dry.

**360. *Cortinarius (Phlegmacium) decoloratus*.** *Fr. Hym. Eur.* 351. *Cooke Illus. t.* 729.

Pileus fleshy, thin, expanded, obtuse (2-4 in. broad); viscid, even, soon dry, floccose, and discoloured; stem attenuated from the thickened base (3 in. long,  $\frac{1}{2}$  in. thick), fibrillose-striate, silvery, naked above; gills emarginate, somewhat crowded, whitish, or bluish-grey, then clay-coloured cinnamon. Spores  $7 \times 3-4 \mu$ .

In woods. Victoria.

TRIBE 2. *Myxarium*. Pileus and stem viscid.

- 361. Cortinarius (Myxarium) Archeri.** *Berk. Fl. Tasm. t. 181, f. 7. Sacc. Syll. 3763.*

Pileus convex, fleshy, rivulose, violet brown (2-3 in. or more); stem stout, equal, viscid, violet (2-3 in. long, 1 in. thick); gills pallid clay-colour, rather broad, adnate, transversely rugose; spores obliquely ovate, 11-12  $\mu$  long.

On the ground. Tasmania.

- 362. Cortinarius (Myxarium) erythræus.** *Berk. Hook. Journ., 1845, p. 48.*

Small, blood red. Pileus clothed with a thick gelatinous coat (1-1½ in. broad); convex, smooth; stem short, viscid (¾ in. high, 2 lines thick); gills adnexed, ventricose; mycelium yellow. Spores red ochre.

On the ground. W. Australia.

TRIBE 3. *Inoloma*. Pileus silky, dry. Veil simple.

- 363. Cortinarius (Inoloma) violaceus (Linn.).** *Fr. Hym. Eur. 360. Cooke Illus. t. 770. Sacc. Syll. 3788.*

Dark violet; pileus fleshy, obtuse, *villososquamosa* (3-6 in. broad); stem bulbous, spongy, villous, internally cinereous violet (3-4 in. long); gills fixed, broad, thick, *distant*, darker. Spores 12-14  $\times$  10  $\mu$ .

In woods. Esculent. Victoria.

TRIBE 4. *Dermocybe*. Pileus silky, thin, smooth, dry, not hygrophanous; stem nearly equal. Veil simple, fibrillose.

- 364. Cortinarius (Dermocybe) sanguineus.** *Fr. Hym. Eur. 370. Cooke Illus. t. 786.*

Pileus fleshy, thin, obtuse, innate, silky, or squamulose; stem stuffed, then hollow, thin, equal, as well as the veil *dark blood-red*; gills crowded, rather broad, darker. Spores 6-7  $\times$  4  $\mu$ .

In woods. Harkaway Range. (Fig. 37).

- 365. Cortinarius (Dermocybe) cinnabarinus.** *Fr. Hym. Eur. 370. Sacc. Syll. Cooke Illus. t. 785b.*

Pileus fleshy, obtuse, silky, then smooth, shining (2-3 in. broad), vermilion; stem stuffed, short, fibrillose, *vermilion-red* (1½-2 in. long, 3-4 lines thick); gills adnate, broad, *rather distant*, darker. Spores 7-8  $\times$  4  $\mu$ .

Under trees. Victoria. Queensland.

TRIBE 5. *Telamonia*. Moist, hygrophanous. Stem annulate and cortinate, hence almost with a duplex veil.

- 366. Cortinarius (Telamonia) bovinus.** *Fr. Hym. Eur. 381. Cooke Illus. t. 822.*

Pileus fleshy, convex, then plane, even, becoming smooth (4 in. broad), watery cinnamon, at length pertuse; stem stout, spongy-bulbous, grey, then dingy cinnamon (3 in. long, 2 in. thick at the

base, 1 in. at the apex), *whitish above the dusky zone*. Gills affixed, very broad, rather distant, cinnamon.

In woods. Victoria.

GENUS 6. **PAXILLUS**. *Fr. Hym. Eur. p. 400.*

Hymenophore continuous with the stem, decurrent. Gills membranaceous, scissile, somewhat branched, and here and there anastomosing behind, *distinct from the hymenophore, and easily parting from it*. Spores dirty whitish, or ferruginous.

TRIBE 1. *Lepista*. Pileus entire, central, spores dingy.

**367. Paxillus Muelleri.** *Berk. Linn. Journ. XIII., 159. Sacc. Syll. 4008.*

Pileus convex, umbonate, dark brown ( $1\frac{1}{2}$  in. broad). Stem tawny, pruinose (1 in. long,  $\frac{1}{2}$  in. thick). Gills decurrent, tawny (spores  $10-12 \times 5-6 \mu$ ).

In meadows. Victoria. Queensland. N.S.Wales.

**368. Paxillus eucalyptorum.** *Berk. Hook. Journ. 1845, p. 49. Sacc. Syll. 4010.*

Cæspitose. Pileus convex, thick, and fleshy, compact, tawny yellow (3-9 in. across), clad with a mealy pubescence, especially near the margin. Stem attenuated downwards, transversely scaly ( $2\frac{1}{2}$  in. high,  $\frac{3}{4}$  in. thick above). Gills distant, decurrent, bright yellow; spores large, oblong, colourless.

Under *Eucalyptus* trees. W. Australia.

TRIBE 2. *Tapinia*. Pileus commonly excentric, or resupinate. Spores ferruginous.

**369. Paxillus (Tapinia) paradoxus.** *Kalch. Fung. Hung. t. 16, f. 1. Cooke Illus. t. 884. Sacc. Syll. 3326.*

Pileus fleshy, convex, then plane, dry, tomentose, rufous-umber; stem solid, somewhat rooting, unequal, fibrillose, yellow or reddish; gills decurrent, distant, connected by veins, yellow, then golden yellow, becoming reddish when old.

On the ground. Victoria. Queensland. (Fig. 38).

**370. Paxillus crassus.** *Fr. Hym. Eur. 404. Sacc. Syll. 4020. Cooke Illus. t. 877.*

Pileus fleshy, oblique, nearly plane, *becoming even*, and ferruginous (3-4 in. broad). Stem stuffed, excentric, very short, ascending (1 in. long,  $\frac{1}{4}$  in. thick). Gills decurrent, broad, *rather distant*, straight, cinnamon. Spores ferruginous,  $15-18 \times 7-8 \mu$ .

On the ground. Queensland.

**371. Paxillus (Tapinia) pannoides.** *Fr. Hym. Eur. 404. Cooke Illus. t. 878. Sacc. Syll. 4021.*

Pileus fleshy, dimidiate, concave, at length smooth (2-11 c.m. broad), dirty yellow, elongated behind, sessile or stipitate; gills decurrent, crowded, *branched, crisped, yellow*.

In cellars, on sawdust, etc. Victoria.

GENUS 7. **HYGROPHORUS.** Fr.

Hymenophore continuous with the stem, and descending into the gills in an unchanged trama. Gills acute at the edge, clothed with a hymenium which is changed into a waxy mass, not membranaceous, and separable from the trama. Spores globose (or subglobose), white.

TRIBE 1. *Limacium*. Fr. Universal veil viscid. Stem clad with scales, or rough with dots above. Gills adnate, decurrent.

**372. Hygrophorus (Limacium) porphyrius.** B. & Br.  
*Linn. Trans.* II., 55. *Sacc. Syll.* 1555.

Pileus campanulate, obtuse, fleshy, rather viscid, purple upwards (3-4 c.m. broad). Stem equal, of the same colour, obtuse (4 c.m. long, 2 c.m. thick). Gills adnexed, white.

Amongst grass. Queensland.

**373. Hygrophorus (Limacium) hypothejus.** Fr. *Hym.*  
*Eur.* 410. *Cooke Illus.* t. 891.

Pileus fleshy, obtuse, thin, clothed with olive evanescent gluten, somewhat virgate (1-2 in. broad); stem stuffed, equal, somewhat spotted, viscid (2-4 in. long, 2-3 lines thick), even, veil cortinate, fugacious; gills distant, yellow. Spores  $10 \times 6 \mu$ .

In pine woods, on sandy soil. Victoria.

TRIBE 2. *Camarophyllus*. Veil none; stem even, smooth, or fibrillose, not rough with points; pileus firm, opaque, moist after rain, not viscid. Gills distant, arcuate.

**374. Hygrophorus (Camarophyllus) virgineus.** Wulf. in  
*Jacq. Misc.* II., t. 15, f. 1. *Fr. Hym. Eur.* 413. *Cooke*  
*Illus.* t. 892. *Sacc. Syll.* 1590.

White. Pileus fleshy, convexo-plane, obtuse, moist, at length depressed, areolato-rimose, floccose when dry ( $2\frac{1}{2}$ -6 c.m. broad); stem stuffed, firm, short, attenuated at the base (2-6 c.m. long, 4-12 m.m. thick); gills decurrent, distant, rather thickened. Spores  $8-11 \times 5-6 \mu$ .

On downs and short pastures. Esculent. Lake Bonney.

**375. Hygrophorus (Camarophyllus) gilvus.** Kalch. *Proc.*  
*Linn. Soc. N.S.W.*, 1882, 105.

With the stature of *Hy. virgineus*, but the whole plant gillvous orange. Pileus umbilicate, then infundibuliform (2-4 lines broad); stem paler, thickened upwards, with the gills decurrent in a cone.

On the ground. Victoria.

**376. Hygrophorus (Camarophyllus) flammans.** Berk.  
*Linn. Journ.* XIII., 160. *Sacc. Syll.* 1599.

Small. Pileus infundibuliform, dark red ( $\frac{1}{2}$  in. across); stem dilated upwards ( $\frac{1}{2}$  in. high); gills few, decurrent, livid red.

On moist rocks. Victoria.

**377. *Hygrophorus (Camarophyllus) nigricans.* Berk.**  
*Linn. Journ.* XIII., 160. *Sacc. Syll.* 1600.

Orange red, turning black, small. Pileus umbilicate (2 lines across); stem thread-like ( $\frac{3}{4}$ -1 in. high); gills distant, decurrent. On the ground. Australia.

**378. *Hygrophorus (Camarophyllus) gigasporus.* Cke. & Mass. *Grav.* XVI., 31.**

Pileus fleshy, thin, convex, then expanded, umbonate, sooty-brown, even, smooth, viscid, shining (4-6 c.m. broad); stem straight, elongated, slightly thickened downwards, fibrillose, solid (8 c.m. long, 6-8 m.m. thick); gills rather distant, adnate with a decurrent tooth, broad, whitish. Spores oval,  $20 \times 12-14 \mu$ .

On horse dung and around it. Victoria.

**379. *Hygrophorus (Camarophyllus) candidus,* Cke. & Mass. *Grav.* XVII., 4.**

White. Pileus fleshy, convex, viscid, disc tinged with brown, obtuse ( $1\frac{1}{2}$  in. diam.); margin very thin; stem rather flexuous, attenuated downwards, stuffed ( $2-2\frac{1}{2}$  in. long); white, here and there spotted with ochre; gills rather distant, rounded behind. Spores subglobose,  $4 \times 3 \mu$ .

On the ground. Victoria. (Fig. 39).

TRIBE 3. *Hygrocybe*. Veil none, whole fungus, thin, watery, fragile; pileus when moist viscid, shining when dry; stem hollow, soft, without dots; gills soft.

**380. *Hygrophorus (Hygrocybe) sciophanus.* Fr. *Hym.* Eur. 417. *Sacc. Syll.* v., 1628. *Cooke Illus.* t. 937a.**

Somewhat brick red; pileus rather fleshy, convex, then depressed, obtuse, slightly viscid, opaque; margin striate (1-2 in. broad); stem hollow, equal, rather flexuous, even (2-3 in. long, 2-3 lines thick); gills decurrent, distant, connected by veins.

In mossy places. Victoria.

**381. *Hygrophorus (Hygrocybe) ceraceus.* Wulf. in Jacq. Coll. II., t. 15, f. 2. Fr. *Hym.* Eur. 417. *Cooke Illus.* t. 904b. *Sacc. Syll.* 1634.**

Brittle. Pileus thin, convexo-plane, obtuse, slightly striate (1 in. across), viscid, wax coloured, as well as the fistulose, unequal, shining stem (1-2 in. long, 2 lines thick); gills adnate, sub-decurrent, distant, yellow. Spores  $8 \times 6 \mu$ .

In pastures. Victoria.

**382. *Hygrophorus (Hygrocybe) coccineus.* Schæff. *Icon.* t. 302. Fr. *Hym.* Eur. 418. *Cooke Illus.* t. 920. *Sacc. Syll.* 1637.**

Fragile. Pileus thin, convex, obtuse, viscid (1-2 in. or more), scarlet, growing pale, smooth; stem hollow, compressed, yellowish, scarlet above (2 in. long, 3-4 lines thick); gills adnate, with a

decurrent tooth, connected by veins, variously shaded. Spores  $10-12 \times 6 \mu$ .

In pastures. Cape Otway Ranges.

**383. *Hygrophorus (Hygrocybe) miniatus*. Fr. Hym. Eur. 418. Cooke Illus. t. 921a. Sacc. Syll. 1639.**

Fragile. Pileus thin, convex, then umbilicate, vermilion (1 in. across), soon dry, changing colour, opaque, smooth or squamulose; stem somewhat stuffed, equal, polished, scarlet (2 in. long, 1 line thick); gills adnate, distant, yellow, or yellowish vermilion. Spores  $10 \times 6 \mu$ .

In moist places. Queensland. Victoria.

**384. *Hygrophorus (Hygrocybe) conicus*. Scop. Carn. II., 443. Fr. Hym. Eur. 419. Cooke Illus. t. 908.**

Fragile. Rarely red, commonly yellow, viscid when moist, shining when dry, usually turning black; pileus submembranaceous, conical, acute, smooth, somewhat lobed, at length expanded, and rimose; stem hollow, cylindrical, fibroso-striate; gills attenuated, free, ventricose, thin, rather crowded. Spores  $10 \times 7 \mu$ .

In pastures. Victoria.

**385. *Hygrophorus (Hygrocybe) scarlatinus*. Kalch. Grev. VIII., t. 143, f. 11. Sacc. Syll. 1677.**

Small. Pileus rather fleshy, convex, very obtuse ( $1\frac{1}{2}$  in. broad), even, smooth; margin inflexed, bright scarlet; stem hollow (1 c.m. long, 1-2 m.m. thick), rosy white; gills adnate, rather distant, and thick, rosy. Trama floccosely granulose. Spores subglobose, 3-4  $\mu$  diam., smooth.

On the ground. Victoria. Queensland.

**386. *Hygrophorus (Hygrocybe) subremotus*. Cke. & Mass. Grev. XVI., 113.**

Pileus convex, flattened, at length depressed in the centre, yellow, disc becoming reddish, viscid (1 in. diam.); margin faintly striate; stem elongated, hollow, equal, whitish, spotted with yellow (3 in. long,  $\frac{1}{4}$  in. thick); gills attenuated behind, scarcely reaching the stem, rather distant, white. Spores globose, 7-8  $\mu$  diam.

Amongst grass. Victoria.

**387. *Hygrophorus (Hygrocybe) Lewellinae*. Kalch. Proc. Linn. Soc. N.S.W., 1882, p. 105.**

Wholly lilac, darker at the centre of the pileus, paler at the base of the stem; pileus convex, slightly umbilicate, at length revolute, and easily split ( $1\frac{1}{2}$  in. broad); stem fistulose, equal, naked ( $1\frac{1}{2}$  in. long, 2-3 lines thick); gills adnexed, ventricose, rather broad, somewhat distant.

On the ground. Victoria.

GENUS 8. **GOMPHIDIUS.** *Fr.*

Not yet recorded in Australia.

GENUS 9. **LACTARIUS.** *Fr. Epicr. p. 333.*

Hymenophore continuous with the stem. Gills unequal, between membranaceous and waxy, rigid, containing a milky fluid, edge acute. Spores globose, white, rarely becoming yellowish.

TRIBE 1. *Piperites.* Stem central, gills unchangeable, naked, neither discoloured nor pruinose; milk at first white, commonly acid.

**388. Lactarius (Piperites) stenophyllus.** *Berk. Fl. Tasm. II., 248, t. 181, f. 8. Sacc. Syll. 1694.*

Pileus infundibuliform, fleshy, yellowish or whitish, zoned, margin involute (10 c.m. broad); stem stuffed, flexuous, of the same colour as the pileus (4-5 c.m. long, 12 m.m. thick), gills very narrow, rather flesh coloured. Spores ovate, even.

On the ground. Tasmania.

**389. Lactarius (Piperites) turpis.** *Fr. Hym. Eur. 423.*

var. **plumbeus.** *Bull. Champ. t. 282, t. 559, f. 2.*

*Fr. Hym. Eur. 429. Sacc. Syll. 1720.*

Pileus compact, convex, at length infundibuliform, dry, unpolished, dingy, then blackish brown (7-13 c.m. broad); stem solid, equal, blunt (3-8 c.m. long); gills crowded, white, then yellowish; milk acid, white, unchangeable. Spores 6-8  $\times$  4-6  $\mu$ .

In woods. Victoria.

**390. Lactarius (Piperites) piperatus.** *Scop. Carn. 449.*

*Fr. Hym. Eur. 430. Cooke Illus. t. 979. Sacc. Syll. v., 1727.*

White. Pileus compact, umbilicate, then infundibuliform (4-9 in. broad), rather regular, not zoned, even, smooth; stem solid, thick, very short, white (1-2 in. long, 1-2 in. thick); gills decurrent, arcuate, crowded, narrow, dichotomous, white; milk copious, acid, white. Spores 8  $\mu$  diam.

In woods. Queensland. (Fig. 40).

TRIBE 2. *Russularia.* Stem central, gills pallid, then discoloured, becoming darker, changing when turned to the light, at length pruinose; milk white, at first mild, or mild becoming acid.

**391. Lactarius (Russularia) subtomentosus.** *B. & Rav. Ann. Nat. Hist., Oct., 1869.*

Pileus subtomentose, compact (2-3 in. broad), umber, stem hollow (1 in. long,  $\frac{1}{2}$  in. thick), whitish at the base, gills broad, distant, decurrent, whitish; milk white, then yellowish, acid.

On the ground in swamps. Victoria. N.S.Wales.

**392. Lactarius (Russularia) pallidus.** *Pers. Syn. 431. Fr. Hym. Eur. 431. Sacc. Syll. v., 1737. Cooke Illus. t. 1007.*

Pileus fleshy, obtuse, depressed, smooth, viscid, zoneless, pallid (6-10 c.m. broad), stem stuffed, then hollow, pruinose, pallid tan

(4-6 c.m. long, 1 c.m. thick), gills subdecurrent, crowded, pallid, pruinose; milk mild, white. Spores globose, rough, 10  $\mu$  diam.

In woods. Victoria.

GENUS 10. **RUSSULA.** *Pers. in Fries Epic.* 349.

Veil none. Hymenophore descending unchanged into the vesiculose trama; gills rigid, fragile, without milk, edge acute. Spores round, often echinulate, white, or turning yellowish.

Series 1. **Compactæ.** Pileus everywhere fleshy, margin at first turned in, always without striæ. Without distinct viscid pellicle. No Australian species.

Series 2. **Furcatæ.** Pileus compact, firm, with a thin, closely adnate pellicle, margin abruptly thin, acute, even. Stem compact, then spongy within. Gills rather forked, mixed with a few shorter ones, commonly attenuated both ways, thin and narrow.

**393. *Russula (Furcatæ) sanguinea.*** *Bull. Champ. t.* 42.

*Fr. Hym. Eur.* 442. *Cooke Illus. t.* 1019. *Sacc. Syll.* 1800.

*Acrid.* Pileus fleshy, firm, convex, then gibbous-depressed and infundibuliform, at length even, moist (6-9 c.m. broad); margin thin, acute, even; stem spongy or solid, slightly striate, white or reddish (3-5 c.m. long); gills decurrent, thin, very crowded, somewhat forked, connected, white.

In woods. Burnett's River.

**394. *Russula (Furcatæ) australiensis.*** *Cke. & Mass. Grev.*  
xvi., 32.

*Acrid.* Pileus fleshy, firm, convex, then plane, red, pellicle thin, adnate, dry (2 in. diam.); stem equal, stuffed, then hollow, straw coloured (2 in. long, scarce half an in. thick); gills attenuated in both directions, scarcely crowded, forked behind, with a decurrent tooth, lemon yellow. Spores globose, rough, 10  $\mu$  diam.

On the ground. Victoria. Queensland. (Fig. 41).

**395. *Russula (Furcatæ) purpurea.*** *Gillet Tab. Anal. p.*  
47. *Cooke Illus. t.* 1022. *Sacc. Syll.* 1805.

Pileus fleshy, at first hemispherical, then convex, and more or less depressed in the centre, rugose-plicate, dark purple, darker in the centre, margin even, then faintly striate (6-10 c.m. diam.), flesh yellowish, red beneath the cuticle; stem slightly incrassated at the base, longitudinally striate, white at the apex, rosy in the middle, yellowish at the base; gills rounded, broad, often bifid, white, then yellowish.

Under trees. Victoria.

Series 3. **Rigidæ.** Pileus destitute of a viscid cuticle, dry, cuticle commonly breaking up in granules or flocci. Flesh thick, compact, firm, margin never involute, and without striæ; stem solid, hard, then spongy; gills a few dimidiate, others divided, rigid, dilated in front, margin of the pileus obtuse.



- 396. *Russula (Rigidæ) rubra.*** *Fr. Hym. Eur.* 444. *Cooke Illus. t.* 1025. *Sacc. Syll.* v., 1817.

*Acrid.* Pileus fleshy, rigid (9-11 c.m. broad), convex, then plane or depressed, dry, *polished, becoming even*; margin patent, obtuse, without striæ; stem solid, hard, stout, white, or red (6-7 c.m. long); gills obtusely adnate, rather crowded, whitish, often forked and dimidiate. Spores 10  $\mu$ .

In grassy places. Victoria. Queensland. N.S.Wales.

- 397. *Russula (Rigidæ) Linnæi.*** *Fries Hym. Eur.* 444. *Cooke Illus. t.* 1026. *Sacc. Syll.* 1818.

*Mild.* Pileus everywhere fleshy, plane, then depressed, *polished, dry, smooth* (8-12 c.m. broad), margin spreading, obtuse, without striæ, *flesh spongy, compact, white*; stem spongy, solid, stout, rivulose, red (3-4 c.m. long, 2½ c.m. thick); *gills adnate, rather decurrent*, somewhat thick, white, turning yellowish, sometimes dichotomous, and anastomosing behind. Spores 8  $\times$  10  $\mu$ .

In woods. Queensland.

Series 4. ***Heterophyllæ*** Pileus firm, margin thin, at length expanded and striate, clad with a thin adnate pellicle. Gills mixed with many shorter ones. Stem spongy within.

- 398. *Russula (Heterophyllæ) expallens.*** *Gillet Tab. p.* 49. *Cooke Illus. t.* 1029.

Pileus fleshy, firm, rather depressed, viscid, bright purple, centre dark purple (6-8 c.m. diam.), at length decoloured, except the disc, cuticle separable, flesh purple, stem cylindrical, firm, equal, or a little thickened at the base (5-8  $\times$  2 c.m.), turning purple, mealy; gills pallid yellow, furcate at the base, broad.

Under trees. Victoria.

Series 5. ***Fragiles.*** Pileus more or less fleshy, rigid, but fragile, pellicle continuous, viscid after rain; margin membranaceous, at first connivent, when mature sulcate; flesh floccose, friable; stem spongy, at length soft and hollow; gills nearly all equal, simple, becoming broadest in front.

\* *Gills and spores white.*

- 399. *Russula (Fragiles) emetica.*** *Fr. Hym. Eur.* 448. *Cooke Illus. t.* 1030. *Sacc. Syll.* 1841.

*Acrid.* Pileus fleshy, expanded or depressed, polished, shining (5-10 c.m. broad); margin patent, at length *sulcate*; *flesh white, reddish* beneath the *separable* cuticle; stem spongy-solid, firm, elastic, even, white or reddish (6-8 c.m. long); gills *free*, equal, broad, somewhat distant, white. Spores 8  $\mu$ .

In woods. Victoria. N.S.Wales. Tasmania.

*var. Clusii.* *Fries Hym. Eur.* 449. *Cooke Illus. t.* 1031. *Sacc. Syll.* 1842.

Pileus convex, then expanded, blood red, *flesh white*, turning yellowish, gills obsoletely adnexed, at length adnate, pallid, yellowish; spores 10  $\mu$ .

In woods. Victoria.

**400. *Russula (Fragiles) fragilis.*** *Pers. Syn. p. 440. Cooke Illus. t. 1091. Hym. Eur. 450. Sacc. Syll. v., 1852.*

Very acid; pileus lax, fleshy, thin, plane, depressed, unequal, polished, cuticle thin, becoming pale, opaque, slightly viscid (5-6 c.m. broad); margin tuberculoso-striate; stem stuffed, then hollow, shining (2-4 c.m. long); gills fixed, thin, crowded, ventricose, white; spores 8  $\mu$ .

In woods. Victoria. Queensland. S. Australia.

**401. *Russula (Fragiles) subalbida.*** *Bres. Pug. No. 6.*

Pileus rather fleshy, flattened, then depressed, viscid, smooth; margin sulcate, lurid white (2-3 c.m. broad); stem stuffed, then hollow, attenuated upwards, of the same colour (2-3 c.m. long, 4-8 m.m. thick); gills crowded, attenuated behind and adnexed, white; spores subglobose, aculeate, 8-10  $\times$  8  $\mu$ , basidia clavate.

On the ground. Queensland.

**\*\* Gills and spores ochraceous.**

**402. *Russula (Fragiles) alutacea.*** *Fr. Hym. Eur. 453. Cooke Illus. t. 1096, 1097. Sacc. Syll. 1874.*

Mild; pileus fleshy, expanded or depressed, with a viscid cuticle, growing pale (15 c.m. broad); margin thin, at length striate, tuberculose, flesh white; stem spongy, solid, stout, white or reddish, even (12 c.m. long, 2½ c.m. thick); gills at first free, thick, equal, somewhat distant, yellow, then ochraceous tan-coloured, naked; spores 11-14  $\times$  8-10  $\mu$ .

In woods. Tasmania.

GENUS 11. **CANTHARELLUS.** *Adans. Fung. Ord. V.*

Hymenophore continuous with the stem, descending in an unchanged trama; gills thick, between fleshy and waxy, fold-like, rather branched, with the edge obtuse; spores white.

I. MESOPUS. *Pileus entire; stem central.*

**\* Pileus and stem solid, fleshy.**

**403. *Cantharellus cibarius.*** *Fr. Hym. Eur. 455. Cooke Illus. t. 1103. Sacc. Syll. 1882.*

Egg-yellow; pileus fleshy, firm, at first repand (3-5 c.m. broad), smooth, at length turbinate; stem solid, attenuated downwards; gills thick, distant, of the same colour; spores 9  $\times$  5-6  $\mu$ .

In woods. Esculent. Victoria. Queensland. N.S. Wales.

**404. *Cantharellus aurantiacus.*** *Fr. Hym. Eur. 455. Cooke Illus. t. 1104. Sacc. Syll. 1886.*

Nearly orange-colour; pileus fleshy, soft, depressed, rather tomentose (5-8 c.m. broad); stem stuffed, unequal (5 c.m. long); gills crowded, straight, dichotomous, darker than the pileus (sometimes paler than the pileus, nearly white); spores 10  $\times$  5  $\mu$ .

In fir woods and on heaths. Queensland.

**405. *Cantharellus aureolus*.** *Cke. & Mass. Grev. xviii., 4.*

Cæspitose, golden; pileus thin, plane, then depressed, delicately pubescent, margin inflexed ( $\frac{1}{4}$ - $\frac{1}{2}$  in. broad); stem slender (1 in. long), equal, faintly striate; gills numerous, rather crowded, very narrow, adnate, decurrent; spores globose, 5-6  $\mu$  diam. Whole plant dark gold colour.

On the ground. Queensland.

**406. *Cantharellus viscosus*.** *Berk. Hook. Journ. 1845, 49.*  
*Sacc. Syll. 1893.*

Wholly of a beautiful yellow; pileus viscid, infundibuliform, repand, somewhat undulate ( $1\frac{1}{2}$  in. or more across); stem (1 in. high) gradually increasing upwards to the base of the gills ( $\frac{1}{3}$  in. thick), pruinose with yellow; gills furcate, decurrent; spores bright ochraceous, oblique, yellow under the microscope.

On the ground, amongst twigs. W. Australia.

**407. *Cantharellus politus*.** *Cke. & Mass. Grev. xvi., 32.*

Pileus rather fleshy, convex, depressed, at length infundibuliform, smooth, even, viscid, very shining, chestnut colour ( $1-1\frac{1}{2}$  in. broad); stem nearly equal, stuffed, pallid without and within (1 in. long, 3-4 lines thick); gills thick, rather distant, branched, pallid cinereous. Spores cylindrical,  $14-15 \times 4 \mu$ .

In fern gully. Victoria. (Fig. 43).

**408. *Cantharellus strigipes*.** *Berk. Fl. Tasm. II., 225.*  
*Sacc. Syll. 1899.*

Pileus liver-coloured, convex (6-7 m.m. diam.); stem of the same colour, attenuated upwards, arising from tawny strigose hairs (25 m.m. long). Gills narrow, radiating.

Amongst ferns. Tasmania.

**409. *Cantharellus pusio*.** *Berk. Hook. Journ. VIII., 134.*  
*Sacc. Syll. 1914.*

Becoming whitish. Pileus infundibuliform, striate, powdery flocculose (8-9 m.m. broad); stem dilated upwards ( $2\frac{1}{2}$  c.m. long, scarcely 1 m.m. thick), brown when dry, and powdery; gills very narrow, decurrent, interstices nearly even.

On the ground. Victoria. Tasmania.

**410. *Cantharellus cinereus*.** *Fr. Hym. Eur. 458. Cooke Illus. t. 1110a, Sacc. Syll. 1919.*

Pileus submembranaceous, infundibuliform, *pervious* to the base, *villosa-squamulose*, dingy black; stem hollow, of the same colour (6 c.m. long); gills thick, distant, cinereous. Spores  $7 \times 5 \mu$ .

In woods. Tasmania.

**411. *Cantharellus leucophæus*.** *Nouvel. Mem. Lille 1831, t. 1, f. 2, 3. Fr. Hym. Eur. 458. Cooke Illus. t. 1111a. Sacc. Syll. 1920.*

Pileus submembranaceous, tough, infundibuliform, smooth, *umber*; stem stuffed, thin, even, of the same colour, a little

thickened at the base (2 m.m. thick); gills distant, simple, mixed with others dichotomous or dimidiate, white. Spores  $9 \times 5 \mu$ .

On the ground. Victoria.

**412. *Cantharellus concinnus*.** *Berk. Linn. Journ.* xvi., 38.  
*Sacc. Syll.* 1934.

Small. Pileus  $\frac{1}{2}$  in. broad. Stem thickened upwards ( $\frac{1}{2}$  in. high, 2 lines thick at the apex). Gills forked, very narrow, interstices veined.

On the ground. N.S.Wales.

**RESUPINATÆ.** *Pileus entire, at first cup-shaped, fixed at the vertex, then reflexed.*

**413. *Cantharellus lobatus*.** *Fr. Hym. Eur.* 461. *Cooke Illus. t.* 1112b. *Sacc. Syll.* 1952.

Gelatinous, membranaceous, sessile, horizontal, ear-shaped (20-30 m.m. broad), *dirty rufous*, externally convex, smooth, beneath with crispate folds, divided near the margin. Spores  $10 \mu$  long.

On mosses in swamps. Victoria.

**414. *Cantharellus foliolum*.** *Kalch. Grev.* ix., 134. *Sacc. Syll.* v., 1956.

Pileus membranaceous, resupinate, then reflexed, suborbicular, smooth, whitish, pallid ochraceous when dry, with a short excentric or lateral evanescent stem; gills obtuse, few (4-5), very distant, joined by veins.

On twigs, leaves, etc. Queensland.

GENUS 12. **NYCTALIS.** *Fr.*  
Not indigenous.

GENUS 13. **MARASMIUS.** *Fries.*

Fungi tough, dry, shrivelling, but not putrescent, reviving when moistened. Hymenophore continuous with the stem, but homogeneous, descending into the trama; veil absent. Stem cartilaginous or horny. Gills tough, rather distant, with an acute edge.

Section I. COLLYBIA. Pileus between fleshy and tough, at length rather leathery, sulcate, or corrugated; margin at first involute. Stem somewhat cartilaginous, mycelium floccose, sometimes not manifest.

a. SCORTEI. *Stem villous. Gills free.*

**415. *Marasmius urens*.** *Fr. Hym. Eur.* 465. *Cooke Illus. t.* 1116. *Sacc. Syll.* 1976.

Acrid. Pileus between fleshy and coriaceous, convex, then plane, smooth, *even*, at length wrinkled or rivulose (3-6 c.m. broad); stem fibrous, solid, rigid, *pallid*, mealy with white fibrils, and

clothed with white down at the base (10-14 c.m. long, 6 m.m. thick); gills free, joined behind, pallid, somewhat yellowish, becoming brownish, at length remote, distant, firm. Spores  $3.4 \times 2\frac{1}{2}$ -3  $\mu$ .

In woods. Queensland.

**416. *Marasmius hepaticus*.** *Berk. Hook. Journ. v., p. 1.*  
*Sacc. Syll. 2013.*

Cæspitose. Pileus hemispherical, becoming smooth, rather fleshy (18 m.m. broad); stem nearly equal above, but thickened below, smooth, fibrously cartilaginous, liver colour, as well as the pileus (4 c.m. long, 3 m.m. thick); gills nearly free, distant, attenuated behind, tawny.

Amongst ferns. Tasmania.

**417. *Marasmius pilopus*.** *Kalch. Grev. VIII., t. 143, f. 13.*  
*Sacc. Syll. v., 2014.*

Pileus between coriaceous and membranaceous, almost diaphanous, convex, obtuse, or with the centre depressed (scarcely 1 in. broad), wholly radiately striate, gilvous, becoming pale; stem stuffed, then hollow (1-2 in. long, 1 line and more thick), somewhat bulbous at the base, invested wholly with a powdery ochraceous brown tomentum; gills adnate, very broad behind, narrower towards the margin, distant, branched, edge entire, red flesh colour when dry; spores oval ( $2\frac{1}{2} \times 1\frac{1}{2}$   $\mu$ ).

On wood. N.S. Wales.

b. Tergini. *Stem rooting.*

**418. *Marasmius confertus*.** *B. & Br. Ceylon Fungi No.*  
*352. Sacc. Syll. 2046.*

Cæspitose. Pileus rather campanulate, then flattened or depressed, somewhat membranaceous, tawny, even (18 m.m. diam.); stems of the same colour, hollow, paler above, polished, arising from a common membranaceous pilose base ( $2\frac{1}{2}$ -5 c.m. long,  $1\frac{1}{2}$  m.m. thick); gills of the same colour (2 m.m. broad), ventricose, free. Spores subglobose, 6  $\mu$ .

Amongst dead vegetables. Queensland. N.S. Wales.

**419. *Marasmius Muelleri*.** *Berk. Linn. Journ. XVIII., 383.*  
*Sacc. Syll. 2049.*

Cæspitose. Pileus umbilicate, rugosely sulcate, delicately tomentose, tawny ( $2\frac{1}{2}$  c.m. broad); stem thick, dilated at the base, pulverulently tomentose ( $2\frac{1}{2}$  c.m. long, 2 m.m. thick); gills distant, rather broad, ventricose, wood coloured, adnate, margin entire.

On the ground. Victoria. Queensland.

**420. *Marasmius erythropus*.** *Pers. Syn. 367. Fr. Hym.*  
*Eur. 470. Cooke Illus. t. 1123. Sacc. Syll. 2051.*

Inodorous. Pileus rather fleshy ( $1\frac{1}{2}$ - $2\frac{1}{2}$  c.m. broad), convexo-plane, then obtuse, even, turning pale, at length rugose; stem fistulose, striate, smooth, dark-red, somewhat pruinose when dry,

base whitish, strigose (5-8 c.m. long, 4 m.m. thick); gills free, seceding, broad, lax, connected by veins, quite entire, whitish. Spores  $10-11 \times 4-5 \mu$ .

Amongst leaves, near stumps. Victoria. Queensland.

**421. *Marasmius impudicus*.** *Fr. Hym. Eur.* 471. *Sacc. Syll.* v., 2057. *Cooke Illus. t.* 1124b.

Fœtid. Pileus rather fleshy, tough, convexo-plane, depressed, margin at length striate ( $1\frac{1}{2}$ - $2\frac{1}{2}$  c.m. broad), growing pale; stem fistulose, equal, turning purple, everywhere whitish velvety when dry, base naked, rooting (5 c.m. long, 2 m.m. thick); gills nearly free, ventricose, flesh colour, then white. Spores  $8 \times 4-5 \mu$ .

About trunks. Victoria.

**422. *Marasmius lanaripes*.** *Cke. & Mass. Grev.* xviii., 4.

Pileus fleshy, coriaceous, thin, convex, then flattened, smooth, even, lead colour, or dirty dark blue (1 in. diam.); stem erect, rigid, at length compressed, hollow (2-3 in. long, 1-2 lines thick), of the same colour, or tinged with olive, very densely velvety; gills adnexed, distant, ventricose, tawny; spores elliptic, white,  $7-8 \times 4 \mu$  (whole plant turns black in drying).

On rotten wood. Queensland. (Fig. 42).

**423. *Marasmius floriceps*.** *B. & C. Cuban Fungi* 127. *Sacc. Syll.* 2063 (= *M. floralis*, *B. & C.*).

Pileus conical, then plane, umbonate, sulcate, smooth, bright red brown (18 m.m. broad); stem twisted, hollow, brown downwards, shining, smooth (4 c.m. long, 2 m.m. thick); gills few, broad, white.

On rotten wood. Victoria.

c. CALOPODES. *Stem short, often tuberculose.*

**424. *Marasmius scorodonius*.** *Fr. Hym. Eur.* 472. *Sacc. Syll.* 2070. *Cooke Illus. t.* 1125a.

Strong scented. Pileus somewhat fleshy, tough, even, soon plane, rugulose, and crispate (1-2 c.m. broad); stem fistulose, equal, quite smooth, shining, rufous (2-3 c.m. long, 2 m.m. thick); gills adnate, crisp, white. Spores  $6 \times 4 \mu$ .

On dry ground. Victoria.

**425. *Marasmius calopus*.** *Pers. Syn.* 373. *Fries Hym. Eur.* 472. *Cooke Illus. t.* 1125b. *Sacc. Syll.* 2071.

Inodorous. Pileus rather fleshy, tough, convexo-plane, then depressed, even, at length rugose; stem fistulose, equal, smooth, not rooting, shining, rufous bay; gills emarginate, adnexed, thin, white. Spores  $7 \times 4 \mu$ .

On twigs, grass roots, etc. Queensland. Harkaway Range.

**426. *Marasmius stylobates*.** *B. & C. Cuba No.* 109. *Sacc. Syll.* v., 2084.

White; pileus thin, smooth, convex, then plane, sulcate at the inflexed margin (4 m.m. broad); stem arising from an orbicular

base, smooth, hollow ( $1\frac{1}{4}$  c.m. long); gills broad, distant, free.

On wood. Queensland.

\* *Stem velvety or pruinose, rather tuberculose at the base.*

**427. *Marasmius foetidus*.** *Sow. Fungi t. 21. Fr. Hym.*

*Eur. 473. Cooke Illus. t. 1134a. Sacc. Syll. v., 2095.*

*Foetid.* Pileus submembranaceous, tough, convex, then expanded and umbilicate, *striato-plicate*, turning pale when dry, subpruinose; *stem fistulose*, velvety or pruinose, bright brown, base flocculose; gills annulato-adnexed, distant, *rufous-yellow*.

On decayed twigs. Queensland.

**428. *Marasmius ramealis*.** *Bull. Champ. t. 336. Sacc.*

*Syll. v., 2103. Fr. Hym. Eur. 474. Cooke Illus. t. 1127b.*

*Inodorous.* Pileus somewhat fleshy, plane or depressed, obtuse, *without striæ, rugulose*, opaque; stem stuffed, short, mealy, white, *rufous* below; gills adnate, *rather distant, narrow*, white.

On dry dead branches. Queensland.

**429. *Marasmius opacus*.** *Berk. & Curt. Hook. Journ. 1849, p. 99. Sacc. Syll. 2106.*

Slender. Pileus convex, rugulose, opaque, powdery, whitish (2 lines diam.); stem seating, elongated, powdery ( $1-1\frac{1}{2}$  in. high,  $\frac{1}{2}$  line thick), almost mealy, pallid; gills ventricose, distant, adnexed.

On leaves and twigs. Queensland. N.S. Wales.

**430. *Marasmius rheicolor*.** *Berk. Ann. Nat. Hist. III., 376.*

*Sacc. Syll. 784.*

Rhubarb colour; pileus thin, at length umbilicate, rugose at the centre, striate (5 c.m. broad); stem elongated, thin, invested with a rather fasciculate velvety down (20 c.m. long, 4 m.m. thick); gills rather broad, adnately decurrent, interstices veined, base velvety.

On trunks. Queensland.

Section II. MYCENA. Stem horny, mycelium rhizomorphoid.

Pileus campanulate, expanded.

a. CHORDALES. *Stem rooting, or dilated at the base.*

**431. *Marasmius caudicinalis*.** *With. Fr. Hym. Eur. 476.*

*Cooke Illus. t. 1134a. Sacc. Syll. 2122.*

Pileus membranaceous, campanulato-convex, obtuse, smooth ( $1\frac{1}{4}$  c.m. broad), even, then striato-sulcate, ferruginous, yellow, then ochre; *stem fistulose, flocculose, bay, attenuated above and paler, farinose* (5 c.m. long); gills adnato-decurrent, connected by veins, yellow. Spores  $5-6 \times 2-3 \mu$ .

On the ground, amongst leaves. Victoria. Queensland.

**432. *Marasmius cohærens*.** *A. & S. Cooke Illus. t.*

*1128b.* = *Agaricus (Mycena) cohærens. Alb. & Schw. Fr.*

*Hym. Eur. 137. Fr. Icon. t. 80, f. 1.*

Pileus rather fleshy, campanulate, then expanded, obsoletely umbonate, *velvety*, cinnamon brown, growing pale (3-4 c.m.); stem

*horny*, very rigid, even, smooth, shining bay, pallid above (11 c.m. long); gills *free*, distant, connected by slight veins, white, then yellowish, growing pallid. Spores  $12 \times 6 \mu$ .

On the ground. Tasmania.

**433. *Marasmius putredinis*.** *B. & C. Linn. Journ.* x. *Sacc. Syll.* 2133.

Pileus plane, thin, smooth, reddish yellow or grey ( $1\frac{1}{2}$ - $2\frac{1}{2}$  c.m. diam.); stem of the same colour (18 m.m. long, 1 m.m. thick), solid, equal, smooth; gills narrow, adnate, white, then turning yellowish.

On *Eucalyptus*. Victoria.

**434. *Marasmius hæmatocephalus*.** *Mont. Syll.* 109. *Sacc. Syll.* 2143. = *M. erythrocephalus*. *Mont.*

Pileus convex, plicate, membranaceous, crenate, at first campanulate, blood-red (1-2 c.m. broad); stem horny, hair-like, even, umber, fixed by a pallid dilated base; gills attenuated, adnexed, few, becoming pallid.

On dead leaves. Victoria. Queensland.

**435. *Marasmius ferrugineus*.** *Berk. Hook. Journ.* 1843, p. 630. *Sacc. Syll.* 2144.

Pileus membranaceous, convex, plicate, ferruginous-yellow (4-8 m.m. diam.); stem slender, twisted, cinereous-brown, smooth, rather shining (1-2 c.m. long), fixed by an orbicular, rather pilose base; gills pallid, interstices veined, attenuated behind.

On dead leaves. Victoria.

**436. *Marasmius meloniformis*.** *Berk. Fl. Tasm.* II., 249. *Sacc. Syll.* 2147.

Minute; pileus hemispherical, bay-brown, umbilicate, deeply sulcate, mealy (1 m.m. broad); stem thread-like, shining (4 c.m. long); gills whitish.

On leaves of *Eucalyptus*. Tasmania.

b. *ROTULÆ*. Stem filiform, flaccid, base inserted; pileus soon becoming plane, or umbilicate; epiphyllous.

\* Stem quite smooth, shining.

**437. *Marasmius rotula*.** *Scop. Fr. Hym. Eur.* 477. *Cooke Illus. t.* 1129a. *Sacc. Syll.* 2150.

Pileus membranaceous, slightly convex, umbilicate, plicate (2-6 m.m. broad); stem horny, fistulose, shining, quite smooth, blackish (2-3 c.m. long); gills few, broad, distant, attached to a free collar behind, pallid white; spores  $6 \times 3-4 \mu$ .

On fallen twigs, etc. Victoria. Queensland.

**438. *Marasmius calobates*.** *Kalch. Grev. iv.*, 71, t. 143, f. 16. *Sacc. Syll.* 2187.

Pileus membranaceous (4-8 m.m. broad), slightly umbilicate, plicate (when dry), ferruginous, becoming brown; stem horny,



fistulose, thread-like, turning black, rather proportionately long (4-5 c.m. long), quite smooth at the seating base; gills few, rather broad, paler than the pileus.

On putrid leaves of *Bougainvillea*. Victoria. Queensland.

**439. *Marasmius lignyodes*.** *Berk. Linn. Journ.* xviii., 384.  
*Sacc. Syll.* 2199.

Pileus convex, granulate, sulcate (2-5 m.m. broad); stem black, shining, striate (2-3 c.m. long); gills broad, ventricose, umber.

On leaves of *Eucalyptus*. Victoria.

**440. *Marasmius eucalypti*.** *Berk. Fl. Tasm.* ii., 249. *Sacc. Syll.* 2200.

Pileus conical, terminated by an operculiform umbo, or obtuse, brownish (12-18 m.m. diam.), silky; stem hair-like, compressed, shining (2-10 c.m. long); gills ventricose, whitish, interstices veined.

On fruit and branches of *Eucalyptus*. Tasmania. Fiji.

**441. *Marasmius equicrinis*.** *Muell. Grev.* viii., 153. *Sacc. Syll.* 2203.

Sterile mycelium black, shining, like horse-hair, seldom bearing pilei; pileus whitish, becoming tawny, small, membranaceous, convex, obtuse (1-2 m.m. broad); stem hair-like, rigid, black, shining (1 c.m. and more long), arising from a black horse-hair-like mycelium; gills few, distant, paler than the pileus.

On branches. Victoria. N.S.Wales. Queensland. (Fig. 44).

**442. *Marasmius bicolor*.** *Sacc. Syll.* v., 2218 = *M. dichrous*,  
*B. & C. Pac. Exp. No.* 74.

Small. Pileus convex, white, smooth; stem short, rufescent below, thread-like; gills few, adnexed and decurrent, interstices even, white.

On trunks. Queensland.

**443. *Marasmius rufopallidus*.** *Kalch. Grev.* iv., 71, t. 143,  
*f.* 15. *Sacc. Syll.* 2219.

Pileus membranaceous, rather convex, broadly umbonate, umbo circumscribed with a circular line (4-6 m.m. broad), rather striate, smooth, light reddish; stem filiform, smooth, pallid (3 c.m. long), fixed at the base by a white mycelium; gills reaching the stem, rather crowded, pallid.

On the ground about trunks. Queensland.

**444. *Marasmius aciculæformis*.** *Berk. & Curt. Linn. Journ.*  
x. *Sacc. Syll.* 2223.

Gregarious. Pileus convex, tawny, scarcely sulcate (2 lines across). Stem hair-like, rigid, quite smooth, shining, brownish (1½ in. long). Gills few, whitish.

On rotten wood. Queensland.

**\*\* Stem velvety.**

- 445. *Marasmius epiphyllus.*** *Fr. Hym. Eur.* 479. *Cooke Illus. t.* 1137a. *Sacc. Syll.* 2239.

Pileus membranaceous, nearly plane, at length umbilicate, smooth, plicato-rugose (3-11 m.m. broad); stem rather horny, fistulose, *finely velvety*; bright brown below, inserted ( $1\frac{1}{2}$  c.m. long); gills adnate, *few, distant, entire, veined*, white. Spores  $3 \times 2 \mu$ .

On fallen leaves, twigs, etc. Victoria.

- 446. *Marasmius primulinus.*** *Berk. Linn. Journ.* xvi., 38. *Sacc. Syll.* 2257.

Pileus convex, then flattened, pale yellow, at length umbilicate, pulverulent ( $\frac{1}{2}$  in. diam.); margin striate; stem short ( $\frac{1}{2}$  in. long), slender, mealy; gills rather thick, of the same colour.

On ? N.S. Wales.

- 447. *Marasmius de Tonymanus.*** *Sacc. Syll.* 2259 = *Marasmius minutissimus.* *Muell. & Kalch. Grev.* xiii., t. 143, f. 12., *not Peck.*

Pileus scarcely the size of a mustard seed, subglobose, brownish. Stem hair-like, seating (2 lines long), powdered with white at the apex, otherwise smooth and blackish. Gills few and scarcely visible.

On branches. N.S. Wales.

- 448. *Marasmius subsupinus.*** *Berk. Fl. Tasm.* ii., 249. *Sacc. Syll.* 2260.

Small. Pileus convex, rather rugose, mealy, adhering behind (5-10 m.m. diam.). Stem short, mealy. Gills few, rigid, plane.

On rotten wood. Queensland. Tasmania.

- 449. *Marasmius rhyticeps.*** *Kalch. Grev.* iv., 71, t. 143. f. 14. *Sacc. Syll.* 2261.

Pileus membranaceous, hemispherical, soon expanded, rugosely plicate, slightly papillate in the centre ( $\frac{1}{2}$ -1 c.m. broad), tawny, becoming rufous; stem thread-like, velvety, flesh-colour (3-4 c.m. long), base seating, white-tomentose, rufous-brown or growing pale below; gills (8-12) rather broad, ventricose, distant, touching the stem, white.

On *Passiflora* twigs. Queensland.

Section III. *Arus* Pileus sessile, resupinate.

- 450. *Marasmius emergens.*** *Berk. in Herb. Sacc. Syll.* 2286.

Very minute, white, suberumpent; pileus convex (1 m.m. broad); stem abbreviated, or sometimes elongated, curved, ascending; gills distant, few, white.

On wood. Tasmania.

- 451. *Marasmius affixus.*** *Berk. Hook. Journ.* vii., 573. *Sacc. Syll.* 2291.

Pileus hemispherical, at length resupinate, whitish, mealy tomentose (2-5 m.m. diam.), as well as the short stem; gills few, adnate, ochraceous, interstices even.

On putrid wood. Tasmania. Queensland.

- 452. *Marasmius exocarpi*.** *Berk. Linn. Journ.* XVIII., 384.  
*Sacc. Syll.* 2291.

Wholly resupinate, white (7-10 m.m. diam.); gills very few, interstices broad, even.

On trunks of *Exocarpus*. Victoria. Queensland.

No trace to be found of any species called *Marasmius nigripes*. Berk.

GENUS 14. **LENTINUS.** *Fr. Ep.* 45.

Pileus fleshy, coriaceous, tough, when old, hard and dry; stem hard and often obsolete, when present continuous with the hymenophore; gills tough, simple, unequal, thin, edge acute, generally toothed; trama none.

I. MESOPODES. *Pileus almost entire, stem distinct.*

a. CRINITI. *Pileus hairy or strigose.*

- 453. *Lentinus Lecomtei*.** *Fr. Epicr.* I., 388. *Sacc. Syll.* 2308.

Pileus coriaceous, infundibuliform, circumference regularly reflexed, fawn colour (2-5 c.m. diam.); stem equal, hairy, of the same colour (2-3 c.m. long); gills much crowded, pallid.

On rotten wood. Queensland. N.S.Wales.

- 454. *Lentinus strigosus*.** *Fr. Epicr.* 388. *Sacc. Syll.* 2311.

Reddish fawn colour. Pileus unequal, rather depressed, strigosely hairy (2-5 c.m. diam.), as well as the excentric stem (2-6 c.m. long); gills decurrent, pallid.

On trunks. Queensland. Cudgegong River.

- 455. *Lentinus fulvus*.** *Berk. Ann. Nat. Hist.* x., 369. *Sacc. Syll.* v., 2312.

Pileus deeply infundibuliform, sulcate, striate, somewhat zoned, bay brown (4-4½ c.m. diam.), invested with a short fasciculate tawny, rather hispid tomentum, which is denser about the margin, mixed with longer straight setæ; stem hispid or tomentose, equal (3½-4 c.m. long, 4 m.m. thick); gills distant, entire, all of one length, cinereous.

On rotten wood. Victoria. Queensland. N.S.Wales.

- 456. *Lentinus fusco-purpurens*.** *Kalch. Grev.* VIII., t. 143, f. 17. *Sacc. Syll.* 2315.

Pileus coriaceous, infundibuliform, margin reflexed, strigosely hairy, purple brown (2-2½ in. broad); stem tall, nearly equal, densely setulose, of the same colour as the pileus (3-4 in. high); gills scarcely crowded, sparingly anastomosing, paler than the pileus.

On wood. Queensland. N.S.Wales.

- 457. *Lentinus villosus*.** *Klotsch. Linn.* 1833, 479. *Fr. Epic.* 388. *Sacc. Syll.* 2316.

Pileus brown, coriaceous, hemispherical, umbilicate, fibrously setose (5 c.m. broad); stem solid, firm, central, tawny, fibrillose (5 c.m. long, 6-8 m.m. thick); gills distant, anastomosing behind, white.

On rotten wood. Queensland.

- 458. *Lentinus fasciatus*.** *Berk. Hook. Journ.* 1840, 146. *Sacc. Syll.* 2317.

Pileus (2 in.) thin, coriaceous, wineglass shape, margin involute, pale ochre, fasciculately hispid with short straight hairs (not crisp nor squarrose); stem confluent with the pileus, velvety, tawny, white within (6-7 c.m. long, 6-7 m.m. thick); gills obconically decurrent, pale wood colour, margin entire, more or less tawny, distant, rather broad, mixed with shorter ones, velvety at the base.

On trunks. Queensland. N.S.Wales. W. Australia. Tasmania.

- 459. *Lentinus dealbatus*.** *Fr. Pl. Preiss.* II., 153. *Sacc. Syll.* 2325.

Pileus coriaceous, deeply umbilicate, regular, woolly-strigose, without zones, becoming white; margin reflexed and revolute; stem short, woolly, becoming tawny; gills very decurrent, crowded, simple, somewhat violet.

On trunks. W. Australia.

- 460. *Lentinus tener*.** *Klotsch. Fries. Epic.* 389. *Sacc. Syll.* 2330.

Pileus membranaceous, tough, obconically infundibuliform, bay brown, with scattered evanescent paler fibres (2-4 c.m. diam.). Stem very slender, even, brownish (2-3 c.m. long, 2-3 m.m. thick); gills narrow, toothed, pallid.

On rotten wood. Queensland.

- 461. *Lentinus blepharodes*.** *B. & C. Linn. Journ.* x., 301. *Sacc. Syll.* 2332.

Pileus umbilicate, depressed, hispid, margin ciliate, radiately striate with evanescent hairs (5 c.m. broad, brown). Stem velvety (5-10 c.m. long). Gills distant, entire, flesh colour, interstices veined or even.

On dead branches. Queensland.

- 462. *Lentinus siparius*.** *Berk. & Br. Linn. Journ.* x., 301. *Sacc. Syll.* 2333.

Orange (brown when dry). Pileus deeply umbilicate, woolly (2½ c.m. broad), with erect, rigid fasciculate hairs intermixed; stem cylindrical, velvety (2½ c.m. long), a little thickened at the base, brownish; gills entire.

On rotten wood. Queensland.

**463. *Lentinus calvescens*.** *Berk. Dec. No. 536. Sacc. Syll.*  
2348.

Pileus umbilicate, then infundibuliform, pallid, at first villose, then bald, margin lobed (7-8 c.m. broad); stem short, naked ( $1\frac{1}{2}$ - $2\frac{1}{2}$  c.m. long, 4 m.m. thick); gills rather distant, very decurrent, rather broad, edge thin, nearly entire.

On trunks. Queensland.

b. LEPIDEI. *Pileus scaly, with a more or less manifest veil.*

**464. *Lentinus tigrinus*.** *Fr. Hym. Eur. 481. Cooke Illus.*  
*t. 1138. Sacc. Syll. 2349.*

Pileus fleshy, leathery, thin, orbicular, umbilicate, whitish, sprinkled with innate pilose blackish scales (4-6 c.m. broad); stem thin, not striate, scaly, somewhat veiled at the apex (2-6 c.m. long); gills attenuated, decurrent, very narrow, white, then yellowish. Spores subsphaeroid,  $6\frac{1}{2} \times 3 \mu$ .

On trunks. Queensland.

**465. *Lentinus Dunalii*.** *D. Cand. Fl. Fr. v., 47. Fr. Hym.*  
*Eur. 481. Cooke Illus. t. 1139b. Sacc. Syll. 2350.*

Pileus fleshy-coriaceous, thin, umbilicate, irregular, pallid (5 c.m. broad), clothed with adpressed spot-like scales; stem short, somewhat silky ( $2\frac{1}{2}$  c.m. long, 6 m.m. thick); gills decurrent, crowded, pallid.

On trunks. Queensland.

**466. *Lentinus lepideus*.** *Fr. Hym. Eur. 481. Cooke Illus.*  
*t. 1140, 1141. Sacc. Syll. 2351.*

Pileus fleshy, compact, tough, convex, then depressed, unequal, (2-4 in.), pallid-ochraceous, broken up into darker spot-like scales; stem stout, rooting, tomentose or scaly; gills sinuate, decurrent, broad, torn, transversely striate, whitish.

On stumps of firs, etc. Queensland.

**467. *Lentinus exasperatus*.** *B. & Br. Linn. Trans. II., 55.*  
*Sacc. Syll. 2358.*

Pileus flattened, umbonate, veiled, rough with rigid warts, powdered with ferruginous (12-13 m.m. broad); stem thickened downwards (10 m.m. long, 6 m.m. thick); gills free, here and there eroded.

On trunks. Queensland.

**468. *Lentinus subnudus*.** *Berk. Hook. Journ. 1847, 492.*  
*Sacc. Syll. 2361.*

Pileus rather infundibuliform, at first clad with mealy scales, then becoming smooth and virgate (2 in. or more broad); stem slender rigid, blackish below (1 in. or more long), dilated at the apex; gills rather broad, nearly entire, scarcely echinulate, decurrent, rather distant.

On fallen trees. Victoria. S. Australia. Queensland.

- 469. *Lentinus manipularis*.** *Berk. & Br. Linn. Journ.* xiv., 43. *Sacc. Syll.* 2471.

Fasciculate ; pileus orbicular, umbilicate, white, clad with mealy scales (2-4 c.m. broad), as well as the curved stem ( $2\frac{1}{2}$  c.m. long, 2-3 m.m. thick) ; gills thin, shortly decurrent, edge toothed.

On dead wood. Queensland.

- 470. *Lentinus cretaceus*.** *B. & Br. Linn. Journ.* xiv., 42. *Sacc. Syll.* 2376.

Pileus orbicular, deeply umbilicate ( $1\frac{1}{4}$  c.m. broad), white, striate, delicately tomentose, sparingly squarrosely scaly behind ; stem thin, at length sulcate, striate (12-18 m.m. long, 2 m.m. thick) ; gills decurrent, entire, pallid.

On the ground. Queensland.

- 471. *Lentinus Kurzianus*.** *Berk. & Curr. Ind. Fun.* 120, t. 20, f. 11. *Sacc. Syll.* 2394.

Pileus tough, infundibuliform, mealy, squamulose, tawny ; stem short, ferruginous brown, becoming blackish at the base ; gills deeply decurrent, bright rubiginous.

On the ground. Queensland.

- 472. *Lentinus Schomburgkii*.** *Berk. Linn. Trans.* xxiii., t. 9, f. 30. *Sacc. Syll.* 2512.

Pileus ( $1\frac{1}{2}$  in. diam.) thin, rigid, and coriaceous when dry, broadly infundibuliform, with the border arched, and the extreme edge slightly incurved, fawn coloured, clothed with pale fasciculate flocci, at length nearly smooth in the centre and silky striate ; stem ( $\frac{3}{4}$  in. long,  $1\frac{1}{2}$  line thick) dingy fawn colour, rather mealy below, striate above ; gills crowded, narrow, thin, pale fawn, decurrent, slightly anastomosing behind, edge thin, denticulate.

On wood. Queensland.

- 473. *Lentinus holopogonius*.** *Berk. Grv.* x., 63.

Dirty white ; pileus infundibuliform (2 in. diam.), densely strigose, margin recurved ; stem (3 c.m. long, 6 m.m. thick) nearly equal, strigose up to the gills ; gills deeply decurrent, crowded, narrow, slightly darker than the pileus.

On stumps. Queensland.

c. PULVERULENTI. *Pileus villose or powdery.*

- 474. *Lentinus radicans*.** *Cke. & Mass. Grv.* xiv., 118. *Sacc. Syll.* 2395.

Pileus infundibuliform, fleshy, rigid, pallid ochraceous, very shortly velvety, even (10-12 c.m. diam.) ; stem thickened downwards, of the same colour and velvety, solid (8 c.m. long, 12-18 m.m. thick), rooting ; gills linear, narrow (scarcely 2 m.m.), decurrent, crowded, descending in lines.

On the ground. Queensland.

- 475. *Lentinus cyathus*.** *B. & Br. Linn. Trans.* 1879, 400.  
= *L. scleroticola*. *Murr. Linn. Trans. Sacc. Syll.* 2398.

Pileus infundibuliform, tough, thin, ochraceous, with velvety brown lines radiating from the centre, more rarely at the margin (4 in. and more across); stem solid, equal, pallid, tomentose, rooting amongst leaves with a copious white mycelium (or attached to a large sclerotiform tuber), whole plant, including the rooting base, 6 in. high (stem 7 lines or more thick); gills ochraceous brown, thin, crowded, simple, somewhat decurrent, undulate when dry.

In dense scrubs. Queensland.

d. COCHLEATI. *Pileus smooth, unequal.*

- 476. *Lentinus cochleatus*.** *Fr. Hym. Eur.* 484. *Cooke Illus.* t. 1142a. *Sacc. Syll.* v., 2415.

Annual, tough, *flaccid*; pileus fleshy, but tough, irregular (2½-6 c.m. broad), somewhat lobed or contorted (2-3 in. diam.), *rufescent*, as well as the solid, firm, *sulcate*, *smooth* stem (2-8 c.m. long); gills crowded, serrated, pinkish-white.

On trunks and the ground. Victoria. Queensland. W. Australia.

e. CORNUCOPIOIDES. *Pileus smooth, regular.*

- 477. *Lentinus pergamenus*.** *Fr. Sym. Myc.* 37. *Sacc. Syll.* 2439.

Cæspitose, white. Pileus between coriaceous and membranaceous, infundibuliform, even (2-4 c.m. broad); margin shortly reflexed. Stem solid, smooth (2-3 c.m. long, 2 m.m. thick). Gills very decurrent, thin, crowded, quite entire.

On the ground. Queensland.

- 478. *Lentinus læviceps*.** *Kalch. in Grev. VIII., t. 144, f. 19.*  
*Sacc. Syll.* 2449.

Pileus between fleshy and coriaceous, convex, then plane or depressed, even, smooth, yellowish-white (6 c.m. broad). Stem solid, attenuated downwards, scaly at the base (5 c.m. long, 1 c.m. thick). Gills decurrent, thick, distant, edge nearly entire.

On ? Australia.

- 479. *Lentinus catervarius*.** *B. & Br. Linn. Trans.* II. *Sacc. Syll.* 2456.

Cæspitose, golden-yellow; pileus convex, then flattened, smooth (8½ c.m. broad); stem cylindrical, thick, nearly equal (3½-5 c.m. high, 10-12 m.m. thick); gills narrow, decurrent, here and there eroded.

On trunks. Queensland.

- 480. *Lentinus Guilfoylei*.** *Berk. Linn. Journ.* XVIII., 384.  
*Sacc. Syll.* 2458.

Pileus umber, deeply umbilicate, smooth, cuticle cartilaginous, margin sulcate (6-7 c.m. broad); stem curved, of the same colour, striate (5 c.m. long, 8-9 m.m. thick); gills decurrent, continued from a groove at the base.

On rotten wood. Tweed River.

- 481. *Lentinus lateritius*.** *Berk. Linn. Journ.* XVIII., 384.  
*Sacc. Syll.* 2459.

Pileus convex, brick-red, quite smooth, margin involute (2-5 c.m. broad). Stem of the same colour, rigid, nearly equal (5 c.m. long, 8-9 m.m. thick). Gills adnexed, eroded, white.

On wood. Australia.

- 482. *Lentinus gracilentus*.** *Cke. & Mass. Grev.* XVI., 73.

Pileus thin, rather membranaceous, infundibuliform, ochraceous, smooth (1 in. diam.). Stem slender, brown, smooth, shining (2 in. long, 1-2 lines thick). Gills deeply decurrent, scarcely crowded, tawny when dry, edge serrulate. Spores  $8 \times 5 \mu$ .

On rotten wood. Victoria. Queensland. (Fig. 45).

- 483. *Lentinus fulvaster*.** *B. & Cke. Brazil No.* 119. *Sacc. Syll.* 2471.

Pileus orbicular, white, becoming tawny when dry, umbilicate, smooth (18 m.m. diam.). Stem slender, smooth, of the same colour (5 c.m. long, 2 m.m. thick). Gills narrow, dentate.

On dead wood. Harkaway Range.

- 484. *Lentinus exilis*.** *Klotsch. Fries Syn. Lent.* x. *Sacc. Syll.* 2472.

Pileus papyraceous, rigid, infundibuliform, regular, even, (radiately striate under a lens), pallid tawny (3 in. broad); stem very short, smooth (12-20 m.m. long), girt by the vestiges of a ring; gills crowded, very decurrent in lines, nearly equal, tawny, not torn.

On putrescent wood. Victoria. Queensland. S. Australia. New Caledonia.

## II. PLEUROTII. *Dimidiate, sessile, or with a lateral stem.*

- 485. *Lentinus hyracinus*.** *Kalch. Grev.* VIII., t. 143, f. 18.  
*Sacc. Syll.* 2483.

Pileus somewhat sessile, orbicular, or semiorbicular, horizontal, contracted into a stem-like base (1-2 c.m. long and broad), rugulose behind, subtomentose, rufous-brown; gills rather broad, dentate, paler.

On wood. N.S. Wales. Queensland.

- 486. *Lentinus fusipes*.** *Cke. & Mass. Grev.* XVI., 1.

Pileus fleshy, tough (10 in. broad), thin, tomentose, becoming smooth in front, white, umbilicate, at length expanded and flattened; margin thin, acute; stem lateral, solid (8 in. long, 1 in. thick), fusiform and rooting, tomentose and scrobiculate, of the same colour; gills crowded, linear, very narrow, decurrent, scarcely darker.

On rotten wood. Queensland.



- 487. *Lentinus castoreus*.** *Fr. Hym. Eur.* p. 486. *Sacc. Syll.* 2485.

Subsessile, imbricate; pilei subresupinate, then elongated, tongue-like, smooth, rather rugose, rufous, then tan colour, margin involute, entire; gills very crowded, narrow, dentate, rufescent.

var. *hirneoloides*. *B. & Br. Linn. Journ.* x. = *Lentinus hirneolus*, *Berk.*

Pallid tawny (2-3 c.m. diam.); gills paler, pileus thin.

On logs. Broger's Creek.

- 488. *Lentinus vulpinus*.** *Fr. Hym. Eur.* 486. *Cooke Illus.* t. 1142b. *Sacc. Syll.* 2486.

Sessile, imbricated. Pileus fleshy, but tough, *conchate*, connate behind, longitudinally rough, *costate*, *corrugate*, or *floccose* (2½-5 c.m. long), tan coloured (3 in. diam.); margin incurved, entire; gills torn, white.

On stumps. Queensland. N.S.Wales.

- 489. *Lentinus lasiophyllus*.** *Cke. & Mass. Grev.* xvi., 1.

Cæspitose. Pilei thin, rather dimidiate, lobed at the margin, plane, depressed behind, even, smooth, shining, ochraceous (2-4 in. broad); stems abbreviated, discoid, tomentose; gills decurrent, rather crowded, linear, narrow, interstices densely velvety, edge almost naked, of the same colour.

On stumps. Victoria. Cudgegong River.

- 490. *Lentinus hepatotrichus*.** *Berk. Fl. Tasm.* t. 181, f. 9. *Sacc. Syll.* 2490.

Pileus hoof-like, liver colour, becoming smooth in front, strigose behind (1½-2 c.m. diam.); gills broad, pallid, margin crenately toothed; spores elliptic, white.

On bark of *Eucalyptus*. Tasmania.

- 491. *Lentinus punctaticeps*.** *B. & Br. Linn. Trans.* II., 55. *Sacc. Syll.* 2495.

Pileus lateral, punctately hispid (2-4 c.m. diam.); stem yellow, very short; gills decurrent, of the same colour, edge acute, here and there eroded.

On trunks. Queensland.

- 492. *Lentinus subdulcis*.** *Berk. Hook. Journ.* 1851, 46. *Sacc. Syll.* 2497.

White, pileus imbricated, lobate, without striæ, smooth (7½ c.m. broad); margin incurved; stem spurious or obsolete; gills rather broad, and somewhat distant. Sweet scented.

On dead wood. Queensland.

- 493. *Lentinus pelliculosus*.** *Schw. Fr. Epicr.* 395. *Sacc. Syll.* 2499.

Sessile, imbricate; pileus tough, reniform, very thin everywhere, and margin strigose, tawny fawn colour (3-5 c.m. diam.); gills broad, torn, pallid.

On rotten trunks. N.S.Wales.

III. RESUPINATÆ. *Pileus resupinate.*

- 494. *Lentinus pulvinulus.*** *Berk. Fl. Tasm. t. 181, f. 10.*  
*Sacc. Syll. 2506.*

Resupinate, or fixed by the vortex, pulvinate (8-20 m.m. diam.); pileus pallid, smooth, margin sulcate; gills broad, ochrey-white, entire.

On rotten wood. Tasmania.

The following species are not to be traced:—

***Lentinus fastigiatus.*** *Fries.*

***Lentinus Shannii.*** *Berk.*

GENUS 15. **PANUS.** *Fr. Epicr. p. 396.*

Between fleshy and leathery, tough, not woody, drying up, but reviving with moisture; gills thinner than in *Lentinus*, tough, at length coriaceous, unequal, *with an entire acute edge*; trama floccose.

\* *Pileus irregular, stem excentric.*

- 495. *Panus conchatus.*** *Fr. Hym. Eur. 488. Sacc. Syll. 2519. Cooke Illus. t. 1149a.*

Pileus fleshy, tough, thin, unequal, excentric and dimidiate (2-4 in.), *cinnamon, becoming pale, at length squamulose*; stem short ( $\frac{1}{2}$  in. long), unequal, pubescent at the base; gills forming decurrent lines on the stem, somewhat branched, whitish, flesh-coloured, then ochraceous.

On trunks. N.S. Wales.

- 496. *Panus tornulosus.*** *Fr. Hym. Eur. 489. Sacc. Syll. 2521.*

Pileus fleshy, then tough, coriaceous, plane, then infundibuliform or dimidiate, *even, flesh-coloured or ochraceous*; stem short, oblique, *clothed with short down*; gills decurrent, rather distant, distinct behind, reddish, then tan-colour. Spores 5-6  $\times$  3  $\mu$ .

On trunks. Victoria. Queensland.

- 497. *Panus rivulosus.*** *Berk. Linn. Journ. xviii., 384. Sacc. Syll. 2540.*

Pileus ochraceous, striately cracked, umbilicate, now and then lobed ( $6\frac{1}{2}$  c.m. broad); stem excentric, striately cracked, at length umber (1 c.m. long); gills decurrent.

On trunks. Australia.

- 498. *Panus incandescens.*** *B. & Br. Linn. Trans. ii., 55. Sacc. Syll. 2541.*

Pileus umbilicate, sometimes infundibuliform, smooth, minutely virgate; margin involute ( $7\frac{1}{2}$  c.m. broad). Stem thickened upwards, cylindrical below, striate ( $3\frac{1}{2}$  c.m. long,  $\frac{1}{2}$  c.m. thick). Gills thin, deeply decurrent.

On wood. Victoria. Queensland. N.S. Wales.

- 499. *Panus suborbicularis.*** *B. & Br. Linn. Trans.* II., 55.  
*Sacc. Syll.* 2542.

Pileus suborbicular, crenate, white, delicately tomentose (6-6½ c.m. broad). Stem obsolete. Gills soft, tomentose at the base, decurrent, edge entire.

On old trunks. Queensland.

- 500. *Panus coriaceus.*** *Berk. Linn. Journ.* XIII., 160. *Sacc. Syll.* 2547.

Gregarious. Pileus coriaceous, at length sulcate, brown behind, or when young black, delicately scaly or areolate (1 in. across); stem none; gills thick, liver-colour.

On bark. Victoria.

- 501. *Panus carbonarius.*** *Cke. & Mass. Grev.* xv., 94.  
*Sacc. Syll.* 2552.

Pileus fleshy, tough, thin, unequal, excentric and dimidiate, even, smooth, umber (5 c.m. broad), flabelliform or infundibuliform; stem short, pallid, a little attenuated downwards (1 c.m. long and thick); gills very narrow, crowded, attenuated behind and decurrent, whitish, edge tomentose. Spores elliptical, white,  $12 \times 5 \mu$ .

Amongst ferns. Lake Bonney. (Fig. 46).

- 502. *Panus stypticus.*** *Bull. Fr. Hym. Eur.* 489. *Sacc. Syll.* 2557.

Pileus coriaceous, kidney-shaped, cinnamon, growing pale, cuticle *breaking up into mealy scales* (1-2 c.m. broad). Stem lateral, short, dilated above. Gills determinate, crowded, *connected by veins*, cinnamon.

On stumps. Victoria.

- 503. *Panus arenicola.*** *Berk. Linn. Journ.* XVIII., 384.  
*Sacc. Syll.* 2567.

Brown. Pileus spatulate from the short tomentose stem; margin inflexed (3-4 c.m. diam.). Gills attenuated behind, tawny.

On sandy soil. Victoria?

- 504. *Panus viscidulus.*** *B. & Br. Linn. Trans.* II., 55.  
*Sacc. Syll.* 2568.

Pileus with the upper stratum gelatinous, flabelliform, pallid, water-loving, rather viscid; margin inflexed (4-5 c.m. broad). Stem short, lateral, villose, arising from a spongy base. Gills decurrent, narrow, white.

On rotten trunks. Victoria. Queensland. N.S. Wales.

- 505. *Panus cinnabarinus.*** *Fr. Pl. Preiss.* 133. *Sacc. Syll.* 2569.

Pileus coriaceous, thin, sessile, reniform, vermilion, cuticle pruinose, opaque. Gills distant, distinct, broad, cinnamon.

At the base of trunks. Queensland. W. Australia.

**506. *Panus lateritius*. Sacc. Hedw. 1889, 125.**

Dimidiate, sessile, orbicular or lunate, membranaceous, tough, margin at first obtusely involute, soon straight, acute, tan-coloured, sprinkled with evanescent brick-red punctiform flocci (8-10 m.m. broad); gills rather remote, few (10-12), entire, and dimidiate narrow, rather hard, somewhat ochrey; spores ovate-ellipsoid,  $9-10 \times 6-6\frac{1}{2} \mu$ , even, hyaline.

On rotten wood of *Eucalyptus*. Kangaroo Island.

**507. *Panus eugrammus*. Mont. Fr. Nov. Sym. 40. = *Lentinus eugrammus*, Mont. Cuba 414, t. 17, f. 2-6. Sacc. Syll. 2573.**

Sessile, imbricate; pilei coriaceous membranaceous, tough, dimidiate, reniform, thinly and radiately lineate, pallid, margin expanded, and then flabelliform-ovate (4-6 c.m. broad); gills convex, entire, of the same colour, soon turning reddish, acute at both ends.

On bark. Queensland.

**508. *Panus olivaceo-fuscus*. Cke. & Mass. Grev. xvi., 1.**

Pileus sooty-brown (fuliginous), very densely velvety, with yellowish-olive down, hard, compact ( $\frac{1}{2}$ -1 in. broad), sessile, imbricate, shell-shaped, margin incurved; gills radiating, rather distant, broad, thin, unequal (sooty when dry); spores narrowly elliptic,  $4 \times 2 \mu$ .

On burnt wood. Victoria. N.S.Wales.

**509. *Panus saccharinus*. Berk. Fl. Tasm. II., 250. Sacc. Syll. 2578.**

Pileus reniform, horizontal, rather fleshy (7-12 m.m. diam.); stem short, mealy, or obsolete; gills with the margins glandular.

On rotten wood. Tasmania.

**510. *Panus patellaris*. Fries Hym. Eur. 490. Sacc. Syll. 2588.**

Resupinate, coriaceous, flat cup-shaped, orbicular, externally pallid, mealy or villous, adnate by the vertex, margin involute (10-15 m.m. diam.); gills concurrent, dark ochre.

On branches. Queensland.

**511. *Panus angustatus*. Berk. in Herb.**

Pileus spatulate (1-2 c.m. broad, 2-3 c.m. long), tough, nearly sessile, tawny, clad with a few minute scattered hairs, attenuated behind into a white downy base; gills unequal, crowded, narrow, white.

On logs. Queensland.

**GENUS 16. *XEROTUS*. Fr. Ep. p. 48.**

Hymenophore continuous with the stem, descending in a similar trama into the coriaceous pileus; gills coriaceous, fold-like, dichotomous, with the edge entire and obtuse.

- 512. *Xerotus tener*.** *B. & Br. Ceylon Fungi* 426. *Sacc. Syll.* 2599.

Pileus kidney-shaped, thin, membranaceous, umber, powdery (12 m.m. broad); stem very short; gills of the same colour, very narrow, interstices even.

On dead wood. Queensland. (Fig. 48).

- 513. *Xerotus proximus*.** *B. & Br. Linn. Trans.* II., 56, t. x., f. 11, 13. *Sacc. Syll.* 2601.

White; pileus suborbicular, delicately powdery ( $1\frac{1}{2}$ -3 $\frac{1}{2}$  c.m. broad); stem lateral or subventral (12-13 m.m. long); gills decurrent, interstices veined.

On branches. Queensland.

- 514. *Xerotus papuasius*.** *Kalch. Grev.* VIII., t. 144, f. 20. *Sacc. Syll.* 2606.

Subcæspitose, smooth, ochraceous tan-colour. Pileus between membranaceous and coriaceous, convex, deeply depressed at the vertex ( $\frac{1}{2}$ -1 in. broad), margin deflexed, radiately sulcate; stem stuffed then fistulose, slightly thickened downwards, powdered with white (1-2 in. high, 1-2 lines thick); gills adnate, decurrent, straight, scarcely branched, entire.

On bark. N.S.Wales.

- 515. *Xerotus Rewakensis*.** *Pers. Fr. Epic.* I., 401. *Sacc. Syll.* 2607.

Smooth, cinnamon; pileus coriaceous or membranaceous, plane, then infundibuliform, margin sulcate (1-2 c.m. diam.); stem solid, short, equal (1 c.m. long); gills distant, plicate on the side and connected.

On wood. Queensland.

- 516. *Xerotus albidus*.** *B. & Br. Linn. Trans.* II., 56, t. x., f. 14, 15. *Sacc. Syll.* 2609.

Whitish; pileus kidney-shaped, smooth, rather hygrophanous, margin striate ( $1\frac{1}{2}$ -2 $\frac{1}{2}$  c.m. broad); stem lateral, smooth, or a little velvety (6-7 m.m. long); gills few, reaching the stem, interstices even.

On wood. Queensland.

- 517. *Xerotus Berterii*.** *Mont. Chil.* VII., 353. *Sacc. Syll.* 2611.

Gregarious; pileus sessile, coriaceous, or membranaceous, smooth, kidney-shaped, striate, ferruginous (2-3 c.m. broad); gills broad, repeatedly dichotomous, violet, pruinose with cinereous, in front connected by veins.

On fallen branches. Queensland.

- 518. *Xerotus lateritius*.** *B. & C. Linn. Journ.* x., 303. *Sacc. Syll.* 2613.

Pileus suborbicular, fixed by the vertex, sulcate, brick-red (1-2 cm. diam.); gills distant, rather broad, entire, black.

On dead bark. Queensland.

- 519. *Xerotus papyraceus*.** *Berk. Fl. Tasm. t. 182, f. 2.*  
*Sacc. Syll. 2616.*

Papery; pileus pallid, striate, or even, thin, margin at length expanded (5 m.m. broad); gills simple, tawny or pallid.

On rotten wood. Victoria. Tasmania.

- 520. *Xerotus Archeri*.** *Berk. Fl. Tasm. II., 250, t. 182, f. 1.*  
*Sacc. Syll. 2617.*

Pileus reniform, quite minute, rugosely sulcate, rufous ( $\frac{3}{4}$  in. diam.); stem very short; gills umber-brown, unequal, simple, rather broad, distant, few, interstices even.

On dead sticks. Victoria. Tasmania.

- 521. *Xerotus fulvus*.** *B. & Br. in Herb.*

Tawny ochraceous; pileus reniform (1-2 c.m.), membranaceous, tough, entire, obscurely striate, velvety behind; stem lateral, thin (1 c.m. long); gills very few, narrow, thin, reaching the stem, of the same colour.

On wood. Queensland.

- 522. *Xerotus Drummondii*.** *Berk. in Herb.*

Gregarious; pileus reniform, lobed, or crispate, ferruginous, tough, smooth (1 c.m. broad), attenuated behind into a short obconic stem; gills distant, adnate, rather broad, becoming blackish.

On twigs. Victoria.

- 523. *Xerotus griseus*.** *Berk. Dec. 168. Sacc. Syll. 2506.*

Infundibuliform, splitting, lobes spathulate, grey ( $12 \times 18$  m.m.), flocculose as well as the spurious stem; margin repand; folds decurrent, white.

On wood. Victoria.

#### GENUS 17. **TROGIA.** *Fr. Mon. Hym.*

Pileus submembranaceous, soft, tough, flaccid; gills venose, fold-like, forked, edge longitudinally channelled or crisped.

- 524. *Trogia crispa*.** *Fr. Hym. Eur. 492. Cooke Illus. t. 1114a.*

Tough, cup-shaped, reflexed, lobed, villous, reddish-yellow ( $\frac{1}{2}$ -1 in. broad); gills plaited, *dichotomous, crisp*, whitish or grey; spores globose, 4-5  $\mu$ .

On twigs. Queensland.

#### GENUS 18. **SCHIZOPHYLLUM.** *Fr. Obs. I., p. 103.*

Pileus not fleshy, dry, sessile; gills coriaceous, branched, split longitudinally at the edge, with the two divisions revolute or spreading, joined to the pileus by a tomentose pellicle.

- 525. *Schizophyllum commune*.** *Fr. Hym. Eur. 492. Cooke Illus. t. 1114b. Sacc. Syll. 2705.*

Pileus adnate behind, somewhat extended, simple and lobed (about 1 in.); gills grey, then brownish, purple, villous, edge revolute; spores  $6 \times 4 \mu$ .

On dead wood. Victoria. N.S.Wales. Queensland. W. Australia. S. Australia. Tasmania. (Fig. 47).

**var. multifidum.** *Fries.*

Pileus deeply cut into numerous laciniae, which are somewhat linear.

On wood. Victoria. Chatham Island.

**GENUS 19. LENZITES.** *Fries.*

Pileus corky, coriaceous, dimidiate, sessile; gills coriaceous, firm, unequal, simple, or branched, and anastomosing behind; edge obtuse or acute, trama floccose, often spuriously porose.

**526. Lenzites betulina.** *Fr. Hym. Eur.* 493. *Cooke Illus. t.* 1145a. *Sacc. Syll.* 2630.

Pileus between corky and coriaceous, firm, *obsoletely zoned* tomentose, pallid; margin of the same colour (1-2 in. broad); gills straight, somewhat branched, anastomosing, pallid.

On trunks. Victoria. Queensland.

**var. velutina.** *Berk. Ann. N. H.* 1843, 181. *Grev. iv.*, 72.

On trunks. Queensland.

**527. Lenzites flaccida.** *Bull. Champ. t.* 394. *Fr. Hym. Eur.* 493. *Cooke Illus. t.* 1145b. *Sacc. Syll.* 2361.

Pileus coriaceous, thin, *flaccid*, unequal, *hairy*, *zoned*, pallid, margin of the same colour (2-5 c.m. broad); gills broad, crowded, straight, unequal, and branched, white, becoming pallid.

On stumps. Victoria. N.S.Wales.

**528. Lenzites sepiaria.** *Fr. Hym. Eur.* 494. *Cooke Illus. t.* 1146a. *Sacc. Syll.* 2636.

Pileus coriaceous, hard, *zoned*, *strigosely tomentose*, rough, *bright-brown* (5-8 c.m. broad), margin yellowish; gills rather thick, branched, anastomosing, *yellowish*.

On wood. Victoria.

**529. Lenzites abietina.** *Fr. Hym. Eur.* 495. *Sacc. Syll.* 2638. *Cooke Illus. t.* 1146b.

Pileus coriaceous, thin, effused and reflexed, clothed with *umber down*, at length becoming smooth and whitish (4-15 × 2-4 c.m.); gills decurrent, simple, unequal, *pruinose or glaucous*, brownish.

On wood. Queensland. S. Australia.

**530. Lenzites Berkeleyi.** *Lev. Ann. Sci. Nat.* 1846, 122. *Sacc. Syll.* 2651.

Pileus coriaceous, flexible, somewhat reniform, sessile, *hairy*, brownish, marked with prominent crowded zones (4-8 c.m. broad); gills very broad, distant, edge entire, ochrey-white.

On trunks. Queensland.

**531. Lenzites striata.** *Swartz. Fr. Epicr. i.*, 406. *Sacc. Syll.* 2653.

Pileus coriaceous, soft, pubescent, *obsoletely zoned*, ferruginous (3-5 c.m. broad); gills thin, straight, somewhat anastomosing, cinereous, edge acute, crenulate or torn.

On trunks. Victoria. Queensland.

- 532. *Lenzites acuta*.** *Berk. Lond. Journ.* 1842, 146. *Sacc. Syll.* v., 2654.

Pileus reniform, coriaceous, greyish-umber, delicately tomentose, zoned (8-9 c.m. broad, 7 c.m. long); margin acute, beautifully striate; gills broad, thin, rather distant, forked, dentate, umber.

On wood. Queensland.

- 533. *Lenzites deplanata*.** *Fr. Epic.* i., 404. *Sacc. Syll.* 2656.

Pileus corky, thin, plane on both sides, reniform, pubescent, without zones, whitish or tan coloured (10-20 c.m. broad); gills straight, parallel, rather thick, with the edge obtuse and entire.

On trunks. Queensland. N.S.Wales. Bloomfield River.

- 534. *Lenzites applanata*.** *Fr. Epic.* p. 404. *Sacc. Syll.* v., 2657.

Pileus corky, plane, depressed (8-9 c.m. and more), reniform, without zones, whitish, tomentose with an adpressed velvety down; gills dichotomous, thin, tan coloured, with the acute edge crenulate.

On wood. Queensland.

- 535. *Lenzites aspera*.** *Klotsch. Fr. Epic.* 405. *Sacc. Syll.* 3658. = *Dædalea aspera*. *Klotsch Linn.* 1833, 480.

Pileus thick, spongy, corky, rather pulvinate, concentrically sulcate, flocculose rough, pallid ( $7\frac{1}{2}$  c.m. broad, 6 c.m. long); gills somewhat dichotomous, very broad, white, straight, mixed with shorter ones ( $2\frac{1}{2}$  c.m. broad at the base).

On dead wood. Queensland. N.S.Wales.

- 536. *Lenzites Beckleri*.** *Berk. Linn. Journ.* XIII., 161. *Sacc. Syll.* 2664.

Woody, horizontal, somewhat reniform, fixed by an orbicular disc; pileus whitish, rather thick, irregularly nodulose, delicately tomentose (5-7 c.m. diam.); margin ochraceous; gills thick, dichotomous, obtuse, ochrey-white, rather labyrinthoid behind.

On trunks. N.S.Wales. Queensland.

- 537. *Lenzites torrida*.** *Kalch. Grev.* VIII., t. 144, f. 21. *Sacc. Syll.* 2665.

Wholly white. Pileus compact, woody, dimidiate, umbonate, sessile, concentrically sulcate, margin obtuse, delicately tomentose ( $2-2\frac{1}{2}$  in. broad,  $\frac{1}{2}$  in. thick); gills rigid, distant, dichotomous and anastomosing, edge obtuse, crenulate, or in a singular manner scrupose.

On wood. N.S.Wales.

- 538. *Lenzites nivea*.** *Cooke Grev.* xv., 94. *Sacc. Syll.* 2670.

Pileus between corky and coriaceous, firm, obsoletely zoned, scrobiculate, snow white, rather discoid behind, margin acute, thin (7-10 c.m. broad); gills straight, thin, broad, scarcely crowded,



unequal, for the most part torn, white ( $1\frac{1}{4}$  c.m. broad) substance thin, white.

On trunks. Victoria. Queensland. (Fig. 49).

**539. *Lenzites Guilfoylei*.** *Berk. Grer. Sacc. Syll.* 2682.

Pileus dimidiate, shell shaped, almost smooth, punctately tuberculate, smoky behind, pallid in front ( $7\frac{1}{2}$  c.m. broad), margin acute; gills rather broad, repeatedly forked, pallid, edge thin.

On trunks. Queensland.

**540. *Lenzites faventina*.** *Cald. Erb. Critt. Ital. No.* 89. *Sacc. Syll.* 2685.

Pileus dimidiate, sessile, corky, surface tuberculate and scrobiculate, becoming nearly smooth, at length turning cinereous, without zones, margin rather obtuse (15 c.m.  $\times$  7 c.m.); gills radiating, undulate, rarely dichotomous about the margin, anastomosing at the base, yellowish-white, darker at the acute edge.

On trunks. Queensland.

**541. *Lenzites Palisotii*.** *Fr. Epic.* 1., 404. *Sacc. Syll.* 2687.

Pileus corky, pulvinate, hemispherical, zoned, smooth, ochraceous, then whitish, margin lobed (10 c.m. broad); gills simple, parallel, anastomosing and porose behind.

On trunks. Queensland. N.S. Wales.

**542. *Lenzites repanda*.** *Mont. Fr. Epic.* 404. *Sacc. Syll.* 2688.

Pileus corky, plane, very broad, zoned, smooth, white, then pallid, margin repand (6-10 c.m. diam.); gills anastomosing, crowded, rather toothed.

On dead wood. N.S. Wales. Queensland. New Caledonia.

Order 2. *POLYPOREI*.

Pores rounded or angular, sometimes sinuous or torn, bearing on the inner surface the tetrasporous sporophores and cystidia.

GENUS 20. **BOLETUS.** *Dill.*

Hymenium tubular, distinct from the hymenophore, and easily separable. Tubes crowded in a porose stratum, without trama, easily separable from each other. Mouth of the tubes round or angular (except in a subgenus sinuous). Spores normally fusiform, rarely oval or subglobose. *Terrestrial putrescent fungi.*

Series I. **Euchroi.** Tubes brightly coloured.

a. **VISCIPELLES.** *Pileus covered with a viscid pellicle. Stem solid, not bulbous nor reticulated. Tubes adnate to the stem behind, rarely sinuate, of one colour.*

**543. *Boletus luteus*.** *Fr. Hym. Eur.* 497. *Sverig. Svam. t.* 22. *Sacc. Syll.* 4641.

Pileus gibbous, then pulvinate, covered with evanescent fuscous gluten; stem firm, equal, whitish, rough with white, then brownish

points above the broad membranaceous ring; tubes adnate; pores minute, simple, yellow; spores ellipsoid,  $8-10 \times 2-3 \mu$ ; flesh white.

On the ground in pine woods, etc. Edible. Victoria. Queensland. Western Australia.

**544. *Boletus elegans*.** *Fr. Hym. Eur.* 497. *Sverig. Svam.* t. 76. *Sacc. Syll.* 4642.

Pileus convex, plane, viscid, golden yellow or turning ferruginous; stem firm, unequal, from golden yellow to rufescent, white, then punctate, with yellow above the fugacious ring; tubes decurrent; pores minute, simple, sulphur yellow; spores ellipsoid.  $8-9 \times 3-4\frac{1}{2} \mu$ ; flesh yellow.

In woods. Edible. Queensland.

**545. *Boletus flavus*.** *Fr. Hym. Eur.* 497. *Sacc. Syll.* 4643.

Firm, pileus pulvinate, compact, when the brownish evanescent gluten has vanished, yellow; stem yellow, becoming brownish, with dingy yellow reticulations above the fugacious membranaceous ring; tubes adnate; pores angular, yellow; spores  $8-10 \times 3-4 \mu$ , granulose, pale ochre.

In woods. Victoria.

**546. *Boletus granulatus*.** *Linn. Fr. Hym. Eur.* 498. *Sverig. Svam.* t. 23.

Pileus convex, expanded, smeared with brownish-ferruginous gluten, when this disappears yellowish; stem without ring, yellowish, punctate above with granules; tubes adnate, short, yellow; pores simple, granulated; flesh turning yellowish.

In grassy places. Edible. Victoria. Queensland.

**547. *Boletus badius*.** *Fr. Hym. Eur.* 499. *Sverig. Svam.* t. 50. *Sacc. Syll.* 4653.

Pileus pulvinate, soft, viscid, bay-brown; stem solid, nearly equal, even, paler, pruinose with brown; tubes adnate, sinuately depressed; pores rather large, dingy, yellowish-white, then greenish, angular; spores fusoid,  $15-20 \times 5-6 \mu$ ; flesh turning blue near the tubes.

In woods. Edible. Queensland.

**548. *Boletus sanguineus*.** *With. Fr. Hym. Eur.* 500. *Sow.* t. 225. *Sacc. Syll.* 4656.

Pileus convex-plane, even, smooth, viscid, blood-red; stem equal, even, variegated with yellow and red; tubes adnate, orange yellow; pores large, unequal.

In woods. Queensland.

**549. *Boletus subsimilis*.** *Fr. Pl. Preiss.* 134. *Sacc. Syll.* No. 4670.

Pileus fleshy, convex, then flattened, viscid, shining brown; stem solid, equal, even, naked, sulphur-coloured, fuscous at the base; pores adnate, very short, equal, sulphur-coloured.

On the ground. Queensland. W. Australia.

**550. *Boletus arenarius.*** *Fr. Pl. Preiss.* 134. *Sacc. Syll.* 4671.

Pileus flattened, repand, viscid, excentric; stem elongated, twisted, pallid above, black below; tubes long, broad (cinnamon).  
On sandy soil. W. Australia.

**551. *Boletus alliciens.*** *Berk. Dec. No.* 34. *Sacc. Syll.* 4673.

Pileus smooth, yellow, viscid ( $2\frac{1}{2}$  in. diam.); flesh when broken blue; stem finely tomentose, thickened downwards, not reticulated ( $1\frac{1}{2}$  in. long,  $\frac{1}{2}$ -1 in. thick); tubes yellow, irregular, adnexed; spores oblong, pallid.

On the ground. Edible. W. Australia.

**552. *Boletus australis.*** *Cooke & Mass. Grav. Vol.* xvi., p. 32.

Pileus convex, pulvinate, viscid, umber (2-3 in. diam.); stem smooth, attenuated downwards, or fusiform and rooting (2-3 in. long,  $\frac{1}{2}$ - $\frac{3}{4}$  in. thick), flesh-coloured; flesh pale rosy, turning blue when cut; tubes adnate, becoming greenish; pores hexagonal, equal, rather large, sulphur-coloured; spores cylindrical,  $20 \times 5-6 \mu$ .

On the ground. Victoria.

b. **SUBTOMENTOSI.** *Pileus destitute of a viscid pellicle, villous when young, rarely becoming at length smooth. Stem at first exserted, not bulbous nor reticulated, although ordinarily rugose or striate. Flesh rarely changing colour. Tubes adnate, of one colour.*

**553. *Boletus chrysenteron.*** *Fr. Hym. Eur.* 502. *Sacc. Syll.* 4680.

Pileus convex-plane, soft, floccosely squamose, brownish or rather brick red, flesh yellow, reddish beneath the cuticle; stem nearly equal, rigid, fibrosely striate, crimson red or yellow; tubes somewhat adnate; pores rather large, angular, unequal, yellow then greenish.

In woods, etc. Victoria. Queensland.

**554. *Boletus subtomentosus.*** *Linn. Fr. Hym. Eur.* 503. *Sacc. Syll.* 4682.

Pileus pulvinate, expanded, soft, dry, villosely tomentose, somewhat olive, beneath the cuticle of the same colour; stem stout, costate or sulcate, rough with points under a lens; tubes adnate, pores broad, angular, yellow.

In woods, etc. Queensland. N.S.Wales. Lake Muir. Fingirmgi.

**555. *Boletus fructicicola.*** *Berk. Hook. Journ.* vii., 574. *Sacc. Syll.* 4633.

Pileus fleshy, convex, at length occasionally cracked towards the margin, smooth, red (5 in. diam.). Stem nearly smooth, not reti-

culate, equal or slightly attenuated below, springing from a mass of earth traversed by mycelium. Pores perfectly free, leaving a deep pit round the stem, compound, irregular, pale orange yellow. Spores obovate, pointed below.

On the ground at roots of *Pleurandra*. Tasmania.

**556. *Boletus Thozetii*.** *Berk. Austr. Fun.* 254. *Sacc. Syll.* 4703.

Yellow; pileus granulately-warted, stem slender, flexuous; pores free.

On barren soil. Queensland.

**557. *Boletus brunneus*.** *Cke. & Mass. Grev.* xix., 90.

Pileus pulvinate, convex, subtomentose, at length cracking into innate scaly patches (10-12 c.m. broad), reddish brown. Stem short, thick, attenuated upwards (7 c.m. long, 5 c.m. thick at the base), colour of the pileus striate with black, flesh whitish, blue when cut, at length brown. Tubes free, pores rather large, angular, greenish grey. Spores 14-15  $\times$  4  $\mu$ , olive.

On the ground. Victoria.

c. **SUBPRUINOSI.** *Tubes adnate to the stem, yellowish. Stem equal, not bulbous or reticulated. Pileus smooth but sometimes pruinose.*

None recorded in Australia.

d. **CALOPODES.** *Stem stout, at first bulbous, typically reticulately veined. Tubes adnate, pores not reddish.*

**558. *Boletus calopus*.** *Fr. Hym. Eur.* 506. *Sacc. Syll.* 4726.

Pileus globose, then pulvinate, unpolished, rather tomentose, olive; stem firm, conical then nearly equal, reticulated, everywhere or only at the apex crimson; tubes adnate, pores minute, angular, yellow. Flesh pallid, a little turning blue.

In woods. N.S. Wales.

**559. *Boletus pachypus*.** *Fr. Hym. Eur.* 506. *Sverig. Svam.* t. 68. *Sacc. Syll.* 4728.

Pileus pulvinate, rather tomentose (4-8 in.), brownish, then pallid tan-colour; stem thick, firm, reticulated, variegated with yellow and red; tubes somewhat elongated, shortened around the stem, pores round, yellow. Spores ovate, 12-14  $\times$  5-6  $\mu$ , yellowish ochre. Flesh whitish, slightly turning blue.

In woods. Queensland. N.S. Wales.

e. **EDULES.** *Stratum of tubes, which at first are not reddish, but commonly stuffed with white, depressed and rounded about the stem, nearly free. Stature stout and bulbous, but the stem (except in two species) not reticulated, or dotted with point-like scales, or red. Flesh scarcely changing colour, of a pleasant taste.*

- 560. *Boletus edulis*.** *Bull. Fr. Hym. Eur.* 508. *Sacc. Syll.* 4748.

Pileus pulvinate, smooth, moist, brownish (5-25 c.m. broad); stem stout, reticulated, pallid brownish (5-13 c.m.  $\times$  5 c.m.); tubes nearly free, elongated, minute, at first white, then yellow or greenish; spores fusoid, oblong, straight, yellow ( $14-16 \times 4\frac{1}{2}-5 \mu$ ).

In woods. Edible. Queensland.

- 561. *Boletus æreus*.** *Bull. Champ. t.* 321. *Sacc. Syll.* 4749.  
= *B. æneus*, *Fr. Epic.*

Pileus pulvinate, smooth, olive brown, turning blackish (7-9 c.m. broad), stem stout, somewhat reticulated, yellowish, with a brownish base; tubes minute, nearly free, sulphur yellow; spores oblong, oblique at the base,  $10-13 \times 5 \mu$ .

In woods. Edible. Queensland.

- 562. *Boletus æstivalis*.** *Fr. Hym. Eur.* 510. *Sverig. Svam. t.* 43. *Sacc. Syll.* 4755.

Pileus pulvinate, subrepand, even, smooth, whitish, granulose when dry; stem very thick, bulbous, even, smooth, yellowish; tubes nearly free; pores equal, minute, yellow. Taste mild. Spores  $12 \times 4-5 \mu$ , brownish. Flesh white above, yellow below, reddish at base of the stem.

In woods. Edible. Queensland.

- 563. *Boletus portentosus*.** *B. & Br. Ceyl. Fun.* 435. *Sacc. Syll.* 4756.

Very large. Pileus depressed in the centre; flesh lemon yellow, unchangeable, lurid beneath the cuticle (20 c.m. or more); stem thick, dilated at the base, rooting ( $9 \times 5$  c.m.); tubes lemon yellow.

On the ground. Victoria.

- 564. *Boletus infractus*.** *Fr. Pl. Preiss.* 134. *Sacc. Syll.* 4760.

Pileus pulvinate, repand, smooth, purple; margin much broken; stem very short, tuberous, floccose above; pores adnate, short, minute, equal, sulphur coloured.

On the ground. W. Australia.

- 565. *Boletus cæsarius*.** *Fr. Pl. Preiss.* 134. *Sacc. Syll.* 4761.

Pileus fleshy, convexo-plane, even, discoid, blood-red or purple; stem stout, equal, sulphur coloured, striately variegated, with short rosy pits; tubes elongated, rounded, yellow, the mouths oblique.

In sandy soil. W. Australia.

- f. *LURIDI*. *Stratum of tubes rounded and free about the stem; pores at the first closed and red; pileus compact, then soft, pulvinate; flesh, juicy, changeable; stem stout, at first short*

*and bulb-like, then elongated and nearly equal, somewhat reticulated or punctate. For the most part poisonous.*

**566. *Boletus luridus*.** *Schæff. t. 107. Fr. Hym. Eur. 511. Sverig. Svam. t. 12. Sacc. Syll. 4768.*

Pileus pulvinate, tomentose, olive-umber, then rather viscid, fuliginous; stem stout, cinnabar red, reticulated or punctate; tubes free, yellow, at length greenish; pores round, scarlet, then orange. Flesh yellow, speedily becoming blue when cut or bruised.

On the ground. Queensland.

Series II. **Tephroleuci.** Tubes at first white or grey.

g. **FAVORI.** *Fr. Tubes broad, angular, unequal, adnate to the stem, but often shortened as they approach the stem, not forming a rounded-free stratum; spores brown.*

None recorded in Australia.

h. **VERSIPELLES.** *Tubes minute, rounded, equal, crowded in a convex stratum, free from the stem. Spores ferruginous.*

**567. *Boletus marginatus*.** *Drum. Berk. Dec. 33, p. 9. Sacc. Syll. 4798.*

Pileus convex, compact, delicately velvety (5 in. diam.); margin thin, distinct from the hymenium, involute; stem short, turbinate tuberos, somewhat rooting ( $1\frac{1}{2}$  long and thick), black, not reticulated, rather velvety; tubes free, fuscous, pallid within; spores broadly elliptic, pallid, ferruginous.

On the ground. Victoria. W. Australia.

**568. *Boletus prunicolor*.** *Cooke & Mass. Grev. xvi., 32.*

Pileus pulvinate, soft, viscid (2 in. diam.), plum colour or purplish, even; stem unequal, ventricose, clavate, or clavately bulbous, pallid, even (3 in. long,  $\frac{1}{2}$ - $\frac{3}{4}$  in. thick); tubes very short behind, scarcely free; pores rounded, minute, simple, pallid; spores elongated, elliptical,  $18-20 \times 6$ , olive.

On the ground. Victoria.

j. **HYPORRHODII.** *Tubes adnate to the stem, whitish; spores rosy, then pale-flesh coloured.*

**569. *Boletus felleus*.** *Bull. Champ. t. 379. Fr. Sverig. Svam. t. 52. Sacc. Syll. 4801.*

Pileus pulvinate, then expanded, soft, smooth, even, somewhat gilvous; stem solid, attenuated upwards and reticulated; tubes adnate, convex, elongated; pores angular, and as well as the flesh when broken, white, then flesh coloured. Spores,  $12-16 \times 4 \mu$ . Taste bitter.

In woods. Victoria. Queensland.

- 570. *Boletus megalosporus*.** *Berk. Fl. Tasm.* II., 251, pl. 182, fig. 3. *Sacc. Syll.* 4803.

Pileus plane, nearly tan coloured; stem thickened downwards, areolately verruculose, reticulate above; pores flesh coloured; spores large, 1-3 septate.

On the ground in woods. Tasmania.

- 571. *Boletus lacunosus*.** *Cke. & Mass. Grev.* XVIII., 5.

Pileus pulvinate, then expanded, soft, somewhat viscid, pallid, ochraceous, tawny, or rather brown (2-4 in. diam.). Stem nearly equal or attenuated upwards, deeply lacunose, pallid (3-4 in. long, 1-2 in. thick); tubes adnate; pores rather large, angular, whitish, then flesh coloured. Spores almond-shaped, rough,  $15 \times 10 \mu$ .

On sandy ground. Queensland. (Fig. 50).

- k. **CARIOSI.** *Stem externally never reticulated, internally stuffed with a spongy pith, at length usually hollow. Tubes at first white, then often yellow; pores minute, rounded. Spores white.*

- 572. *Boletus hædinus*.** *B. & Br. Brisbane Fun.* II., 57. *Sacc. Syll.* 4817.

Pileus convex, thick, tan-coloured, at first rather tomentose; stem thickened about the base, reticulated above, of the same colour; pores pallid.

On the ground. Queensland.

*Species of uncertain affinity.*

- 573. *Boletus napipes*.** *Muell. Linn. Journ.* XII., 161. *Sacc. Syll.* 4830.

Pileus pulvinate, reddish brown, at length turning blackish; stem obconical; pores free, lemon-yellow.

In meadows. Victoria.

#### GENUS 21. **STROBILOMYCES.** *Berk. Outl.* 236.

Hymenophore even. Tubes separable from the hymenium and from each other, broad, equal. Pileus and stem broken up into squarrose scales, fleshy, but tough. Spores rather large, typically deeply coloured.

- 574. *Strobilomyces nigricans*.** *Berk. Hook. Journ.* 1852, p. 139. *Sacc. Syll.* 4837.

Small; pileus convex, expanded, very obtuse, rough in the centre with hexagonal warts; margin flocculosely squamose. Spores  $12 \mu$  long.

In woods. Queensland.

- 575. *Strobilomyces pallescens*.** *Cke. & Mass. Grev.* XVIII., 5.

Pileus pulvinate, imbricated with thick, obtuse, conical warts, rosy purple, growing pale, veil membranaceous and torn, adhering

at the margin; stem equal, striate, pallid; tubes free, shortened towards the stem and towards the margin, very long in the middle; pores rather large, angular, yellowish; flesh turning blue when broken, soon whitish. Spores tawny, longitudinally rugose,  $18-20 \times 8 \mu$ .

At the base of trees. Queensland. (Fig. 51).

**576. *Strobilomyces rufescens*.** Cke. & Mass. Grev.

xviii., 5.

Wholly rufescent. Pileus hemispherical (3-4 in. diam.), very obtuse, densely covered with imbricated conical warts, the apices recurved and evanescent; margin fringed with the broad veil; stem rather bulbous, elongated (6-7 in. long, 1 in. thick), pallid above, rufescent below, striate, solid; tubes free, shortened behind; pores angular, rather large, becoming tawny. Spores brown,  $18-20 \times 9 \mu$ .

At the base of trees. Queensland.

**577. *Strobilomyces fasciculatus*.** Cooke Grev. xx., 4.

Pileus hemispherical, convex, reddish-brown (8-10 c.m. diam.), squamulose, the fascicles of strap-like scales parting into large pentagonal areolæ. Stem nearly equal (8-10 c.m. long,  $1\frac{1}{2}$  c.m. thick), even, paler. Tubes elongated, free behind, mouths angular, yellowish. Spores elliptical, pale brown,  $10-12 \times 5 \mu$ , flesh turning bluish when cut.

On the ground. Victoria.

**578. *Strobilomyces ligulatus*.** Cooke. Grev. xx., 4.

Pileus convex, hemispherical (10 c.m. diam.), brown, clad with darker ligulate scales composed of parallel threads (7-8 m.m. long), often recurved at the extremity. Stem (12 c.m. long, 2 c.m. thick) striate, with a few scattered fibrils, paler, rather attenuated upwards. Tubes long, shortened behind, angular, yellowish or with a reddish tint. Spores brown, elliptical,  $20 \times 10 \mu$ .

On the ground. Victoria.

**579. *Strobilomyces floccopus*.** Rost. Vahl. Fl. Dan. t. 1252. Sacc. Syll. 4835.

Cinereous, at length turning black; pileus pulvinate, soft, with an areolately fasciculate tomentum, broken up into squarrose scales, veil silky, thick, appendiculate as a ring; stem stout, tomentose, umber below, lacunose above; tubes abbreviated behind, pores large, greyish white; spores globose, brownish,  $9 \mu$  diam., shortly apiculate.

On the ground. Queensland.

**580. *Strobilomyces velutipes*.** Cke. & Mass. Grev. xviii., 5.

Turning black. Pileus pulvinate, obtuse, becoming flattened (2-3 in. diam.), imbricated with thick, obtuse, irregular warts, margin crenulate with the veil; stem equal, velvety, sulcate above



(2 in. long,  $\frac{1}{4}$ - $\frac{1}{2}$  in. thick), tubes elongated, shortened at the stem and the margin; pores angular, rather large. Spores subglobose, even, bright brown,  $8 \times 5-6 \mu$ .

On the ground. Queensland.

**581. *Strobilomyces ananæps*.** Berk. Sacc. Syll. 4838.  
= *Boletus ananæps*. Berk. Austr. Fungi, No. 61.

Pileus convex, broken up into flat, thick, broad, floccosely-squamose warts. Spores  $29 \mu$  long.

On the ground. Victoria. Queensland.

GENUS 22. **FISTULINA.** Bull.

Rather fleshy. Hymenium inferior, at first verrucose, then composed of cylindrical, parallel tubes, free from each other, and distinct.

**582. *Fistulina hepatica*.** Fr. Hym. Eur. 522. Sacc. Syll. 4849.

Fleshy and juicy, not rooting; pileus entire, liver colour; tubes at first pallid; spores ovate-globose, rather unequal sided, uniguttulate, pale, rosy-yellow,  $5-6 \times 3-4 \mu$ .

On trunks. Edible. W. Australia.

GENUS 23. **POLYPORUS.** Fries.

Pileus fleshy, tough, then indurated (rarely cheesy, floccose, fragile), externally without furrows or zones, but substance radiating, fibrous within, and often zoned. Pores never strato-se.

a. OVINI. Stem central, fleshy-terrestrial.

\* *Pileus unpolished, squamose or floccose.*

**583. *Polyporus ovinus*.** Schæff. Fr. Hym. Eur. 523. Sver. Svam. t. 8. Sacc. Syll. 4858.

Pileus fleshy, fragile, variable in form, unpolished, soon broken into scales, whitish (6-8 c.m. broad); stem short, unequal, white ( $2\frac{1}{2}$ -3 c.m. long); pores minute, rounded, equal, white, then lemon yellow.

In woods. Victoria.

**584. *Polyporus pes-capræ*.** Pers. Champ. Com. t. 5. Fr. Hym. Eur. 524. Sacc. Syll. 4862.

Subcæspitose; pileus fleshy, fragile, often dimidiate, cracked into scales, bay-brown, at length dark-brown; stem deformed, ventricose, and, as well as the broad pores, yellowish white.

In pine woods. Victoria.

**585. *Polyporus Hartmanni*.** Oke. in Grev. XII., 14. Sacc. Syll. 4866.

Pileus fleshy, rather fragile, sometimes dimidiate, finely velvety (3 in. diam.), reddish brown; margin paler, plane or broadly umbonate, disc thick; stem ventricose, thick, now and then some-

what rooting ( $2\frac{1}{2}$  in. long, 1 in. thick), reddish, velvety above, paler below, somewhat reticulately tomentose; pores small, round, equal, very short, slightly decurrent, pallid. Spores minute, elliptic, white.

On the ground. Queensland. (Fig. 53).

**586. *Polyporus tumulosus*.** *Cke. Grev.* xvii., 55.

Pileus fleshy (3-4 in. diam.), firm, convex, pallid, clad with darker innate scales; margin at first incurved; flesh white; stem short, thick, equal (1-2 in.  $\times$  1 in.), solid, ochraceous; mycelium profuse, white, forming a dense mass at the base; tubes adnate, or a little decurrent, broad; pores large, unequal, angular. Spores  $12 \times 4-5 \mu$ , pale olive.

On the ground. Queensland.

**587. *Polyporus myelodes*.** *Kalch. Grev.* iv., 74. *Sacc. Syll.* vi., 487 (*myclodes*, Err. Typ.).

Pileus fleshy, fragile, irregular, somewhat repand, deeply umbilicate, infundibuliform, surface unequal, rugulose, obsoletely villose, tan coloured, or becoming pale, brownish; stem solid, unequal, obconical, dilated into the pileus; pores short, minute, unequal, whitish. Flesh white.

On the ground, at the base of trunks. Queensland.

b. LENTI. *Stem central, fleshy, then tough, indurated, growing on wood. Stem of the same colour at the base, not black.*

\* *Pileus unpolished, squamose, or villose.*

**588. *Polyporus lentus*.** *Berk. Outl.* 237. *Sacc. Syll.* vi., 4884.

Pileus fleshy, then tough and coriaceous, umbilicate, squamulose, without zones, pallid ochraceous (4 c.m. broad); stem short, central or excentric, incurved (12-25 m.m. long, 9 m.m. thick), hispid and mealy, of the same colour; pores decurrent, irregular, white.

On rotten stems, etc. Victoria.

**589. *Polyporus brumalis*.** *Fr. Hym. Eur.* 526. *Sacc. Syll.* vi., 4885.

Pileus toughly fleshy, then coriaceous, rather umbilicate, without zones, of the present season villose, sooty brown, of last season squamulose, becoming smooth, growing pale (2-12 c.m. broad). Stem thin, hairy, squamulose (2-5 c.m. long, 4-9 m.m. thick); pores oblong and angular, thin, acute, denticulate, white. Spores oblong, curved, biguttulate, hyaline,  $6 \times 2 \mu$ .

On trunks. Queensland.

**590. *Polyporus cupuliformis*.** *B. & C. N.A. Fungi* 121. *Sacc. Syll.* 4902.

Pileus cup-shaped, at length reflexed, rufous, tomentose (2 m.m. or more across); stem very short (2 m.m.); pores small ( $\frac{1}{8}$  m.m.), of the same colour.

On trunks. Victoria.

\*\* *Margin of pileus ciliate.*

- 591. *Polyporus arcularius.*** *Batsch. Fr. Hym. Eur.* 526.  
*Sacc. Syll.* vi., 4903.

Pileus tough, then coriaceous, convex, rather umbilicate, without zones, of present season squamulose with brown, of last season smooth, becoming yellowish ( $1\frac{1}{4}$ - $2\frac{1}{2}$  c.m. broad), margin strigose; stem short, somewhat squamulose, grey brown (scarcely  $2\frac{1}{2}$  c.m. long); pores oblong-rhomboid, thin, large, entire, whitish.

On trunks. Victoria. N.S.Wales. Queensland.

- 592. *Polyporus tricholoma.*** *Mont. Syll.* 153. *Sacc. Syll.* vi., 4908.

Pileus coriaceous, membranaceous, rigid, convex, then infundibuliform, without zones, yellowish (2-3 c.m.), fringed at the margin with rigid brown hairs; stem quite thin, smooth, equal, yellow brown (2-5 c.m. long,  $\frac{1}{2}$ -1 m.m. thick); pores angular, thin, acute, pale, fleshy yellow.

On fallen branches. Queensland.

- 593. *Polyporus similis.*** *Berk. Hook. Journ.* 1843, 635.  
*Sacc. Syll.* vi., 4910.

Pileus plane, then infundibuliform, tough, coriaceous, rigid, smooth, even ( $2\frac{1}{2}$ -4 c.m. broad), margin ciliate; stem thickened downwards, velvety, becoming smooth ( $2$ - $2\frac{1}{2}$  c.m. long); pores small, angular, pallid, dissepiments very thin and toothed.

On old trunks. Queensland. Goode Island.

\*\*\* *Pileus smooth.*

- 594. *Polyporus alveolarius.*** *Bosc. Fries Epic.* 431. *Sacc. Syll.* 4913. *Polyporus collybioides, Kalchb. Grer.* x., 94.

Pileus fleshy, coriaceous, depressed, unequal, smooth, without zones, brown (6-12 m.m. broad); stem firm, central, smooth, thickened at the base ( $2\frac{1}{2}$ -5 c.m. long); pores decurrent, oblong, hexagonal, regular, white.

On trunks. Queensland.

- 595. *Polyporus stipitarius.*** *Berk. & Curt. Cub.* 183. *Sacc. Syll.* vi., 4923.—*Polyporus Armitii, Muell. & Kalch. Grer.* t. 145, f. 22.

White; pileus orbicular, deeply umbilicate, thin, smooth (18-25 m.m. broad), margin not ciliate; stem slender, becoming smooth (18 m.m. long, scarcely 2 m.m. thick); pores small, angular, edge nearly entire ( $\frac{1}{8}$  m.m. broad); spores hyaline.

On wood, etc. Queensland.

- 596. *Polyporus pisiformis.*** *Kalch. Grer.* x., 98. *Sacc. Syll.* 4933.

Wholly white, globose, adnate, sessile, of the size of a pea, or less; pores minute, punctiform, entire.

On wood. Victoria.

The specimen in Kew Herb. from Kalchbrenner is a true *Polyporus*, and not as described by Bresadola. It is probably only a young state of some known species.

- c. SPONGIOSA. *Pileus at first spongy, soft, soaking up water, tomentose, then corky or leathery. Stem short, deformed. Pores various, irregular, pruinose, becoming discoloured.*

\* *Substance brownish.*

- 597. *Polyporus Schweinitzii.*** *Fr. Syst. Myc.* i., 351. *Sacc. Syll.* vi., 4938.

*Pileus thick, between spongy and corky, strigosely tomentose and rough, bay-brown (19 c.m. and more broad); stem thick, very short or obsolete, ferruginous; pores large, variously torn, sulphury, then greenish; spores ovoid, hyaline,  $7-8 \times 3\frac{1}{2}$   $\mu$ . Substance rhubarb-colour.*

On pine stumps. Queensland.

- 598. *Polyporus tabulæformis.*** *Berk. Hook. Journ.* 1845, 302. *Sacc. Syll.* vi., 4939. = *P. spectabilis*, *Fr. Nov. Sym.* 48.

*Pileus orbicular, thick in the centre, thin at the margin, somewhat lobed, a little zoned, rugose, velvety, here and there beset with fasciculate hairs (17-18 c.m. broad), ferruginous bay; substance ferruginous, divergently fibrous; stem central or lateral, short, obtuse, effused into the pileus (3-4 c.m. high, 6 c.m. thick in the middle); pores small, irregular, of the same colour as the pileus.*

On trunks. Queensland.

\*\* *Substance whitish.*

- 599. *Polyporus biennis.*** *Bull. Fr. Hym. Eur.* 529. *Sacc. Syll.* vi., 4944.

*Pileus spongy, then corky-coriaceous, plane or depressed, repand, without zones, clad at first with a vanishing scurfy tomentum, becoming smooth, white, then ferruginous, stem short, thick, ferruginous, woolly, pores labyrinthiform, unequal, acute, torn and toothed, cinereous white, then turning brownish.*

On the ground near trunks. Queensland.

- 600. *Polyporus rufescens.*** *Fr. Hym. Eur.* 529. *Sacc. Syll.* vi., 4946.

*Flesh coloured. Pileus spongy, soft, unequal, hairy (5-12 c.m. broad), stem short, deformed; pores large, sinuous and torn, white, then flesh coloured.*

On grassy ground, about old trunks. Victoria. Queensland. W. Australia. Bunyip Creek.

- 601. *Polyporus proteiporus.*** *Cooke Grev.* xii., 15. *Sacc. Syll.* vi., 4951.

*Pileus whitish, fleshy, tough, then coriaceous, convexo-plane, depressed, delicately tomentose and scurfy, at length nearly smooth*

(5-10 c.m. broad), margin entire or somewhat lobed, incurved; stem short, of the same colour (12-13 m.m. thick,  $2\frac{1}{2}$  c.m. long), flesh pallid; pores angular, irregular, confluent, decurrent ( $\frac{1}{2}$ -2 m.m. diam.), elongated (to 5 m.m.), pale umber, dissepiments thin, torn at the edge.

On the ground. Queensland.

**602. Polyporus hystriculus.** *Cooke Grev. xv., 16. Sacc. Syll. vi., 4952.*

Pileus tough, strigosely hispid, dark brown (4-5 c.m. diam.), discoid, convex; stem thick, abbreviated, central, hymenium pallid, tubes elongated, pores rather large, angular, decurrent, dissepiments thin, torn or toothed; substance white.

About roots. Victoria.

d. **MELANOPODES.** *Stem central or lateral, turning black wholly or at the base. Pileus fleshy, then tough and indurated.*

\* *Pileus squamose or floccose.*

**603. Polyporus squamosus.** *Huds. Fr. Syst. Myc. i., 343. Sacc. Syll. vi., 4953.*

Pileus fleshy and tough, fan-shaped, flattened, ochraceous, variegated with broad, adpressed, spot-like, darker centrifugal scales (to 50 c.m. broad), stem excentric and lateral, stout, reticulated at the apex, blackened at the base; pores thin, variable, at first small, then broad, angular and torn, pallid. Spores ovoid, hyaline,  $12 \times 5 \mu$ .

On trunks. Queensland. Fingiringi.

**604. Polyporus melanopus.** *Fr. Hym. Eur. 534. Sacc. Syll. 4958.*

Pileus fleshy, tough, plane, then infundibuliform, white, then yellowish brown, at first delicately flocculose (5-8 c.m. broad), stem excentric, rather velvety, incurved, thickened downwards, black, pores decurrent, short, minute, obtuse, unequal, white.

On the ground and branches. Victoria. Queensland.

\*\* *Pileus becoming smooth.*

**605. Polyporus picipes.** *Fr. Hym. Eur. 534. Sacc. Syll. vi., 4966.*

Pileus fleshy, coriaceous, then rigid, tough, even, smooth, depressed at the disc and behind (10 c.m. diam.), stem excentric and lateral, equal, firm (2-3 c.m. long), at first velvety, then naked, punctate, black up to the decurrent pores, which are rounded, small, white, then yellowish.

On trunks. Queensland. Victoria. Fingiringi. Gembrook Range.

**606. Polyporus Strangeri.** *Kalch. Linn. Soc. N.S.Wales.*

Pileus suberous-coriaceous ( $1-1\frac{1}{2}$  in.), variable in form, kidney shaped, convex, rather umbilicate, not zoned, unpolished, umber,

turning blackish, stem short (3 lines), cylindrical, discoid at the base, incurved, encrusted, everywhere black (2 lines thick), pores small, round, obtuse, with the flesh snowy white.

On ? N.S.Wales.

**607. Polyporus infernalis.** *Berk. Hook. Journ.* 1843, 637.  
*Sacc. Syll.* vi., 4965.

Pileus flabelliform, entire or rather lobed, depressed behind, thin, acute, at length corky, coriaceous, quite smooth, even, striately rugulose except at the base, blackish liver coloured (8-9 c.m. broad), stem short, lateral, black, thickened upwards, punctate, pulverulent (1-2½ c.m. long, 1 c.m. thick), hymenium brownish; pores minute, round, very short; margin sterile.

On trunks. Victoria.

**608. Polyporus varius.** *Fr. Hym. Eur.* 535. *Sacc. Syll.* vi., 4968.

Pileus fleshy, tough, extenuated, soon becoming woody, smooth, rather virgate, of variable form, depressed at the disc or behind (1½-10 c.m. broad), stem excentric and lateral, even, smooth, downwards gradually cinereous, then black (2½ c.m. long), pores decurrent, minute, short, round, unequal, whitish, then cinnamon.

On trunks. Queensland. W. Australia. Tasmania.

**609. Polyporus elegans.** *Fr. Hym. Eur.* 535. *Sacc. Syll.* vi., 4971.

Pileus equally fleshy, soon indurated, and becoming woody, flattened, even, smooth, of one colour (5-12 c.m. broad), stem excentric or lateral, even, smooth, pallid, base abruptly black, rooting; pores plane, minute, rather round, yellowish white, then pallid.

On trunks. Queensland. Tasmania.

var. **nummularius.** *Bull. t.* 124.

Smaller, thinner, rather regular (scarcely 2½ c.m. broad); stem equal, excentric.

On trunks. N.S.Wales.

**610. Polyporus glabratus.** *Kalch. Hedw.* xv., 114. *Sacc. Syll.* vi., 4974.

Pileus excentric, fleshy, flattened, even, smooth, of one colour, dark brown (2½-5 c.m. broad); stem solid, tapering, even, smooth, becoming brown (3-5 c.m. long, 6-8 m.m. thick); pores minute, round, white, then yellowish. Flesh white.

On trunks. Victoria.

**611. Polyporus Guilfoylei.** *B. & Br. Linn. Trans.* ii., 58.  
*Sacc. Syll.* vi., 4976.

Pileus spathulate, lateral, delicately pulverulent (18-40 m.m. broad, 18-35 m.m. long); stem produced from the pileus, black, cartilaginous; hymenium descending into the stem, pallid. Pores punctiform, 200 μ broad.

On trunks. Queensland.

**612. Polyporus Leprieurii.** *Mont. Syll.* 155. *Sacc. Syll.* vi., 4978.

Pileus coriaceous, membranaceous, tough, reniform, plane, cinnamon, sooty-brown when moist (3-4 c.m. diam.); margin undulately lobed, smooth, shining; stem lateral, very short, black, dilated and scutate at the base, substance dingy brown; pores very short, very minute, angular, mouth, plane, sooty-cinnamon.

On rotten wood. New Guinea.

**613. Polyporus dictyopus.** *Mont. Fl. Fern.* 14. *B. & Br. Brisbane Fungi* ii., 57. *Sacc. Syll.* vi., 4982.

Pileus fleshy, then coriaceous, rigid, thin, even, quite smooth, bay-brown (1-2 c.m. broad); stem lateral, even, thick, smooth, reticulately rugose, bay-brown or black; pores minute, rounded, acute or obtuse, entire, pallid.

On trunks. Queensland.

e. *PETALOIDES.* *Pileus* fleshy, then tough, quite lateral (not marginate behind); stem wholly pallid, commonly very short, scutate at the base, adnate to rotten wood, in a line with the pileus, commonly striately virgate and zoneless.

\* *Pileus* smooth.

**613 bis. Polyporus petaloides.** *Fr. Hym. Eur.* 536. *Sacc. Syll.* 4990.

Pileus rather membranaceous, spatulate, rugose, smooth, zoneless (7 x 4 c.m.), chestnut brown, flaccid when moist; stem lateral, ascending, compressed, smooth, not rooting, whitish, adnate by a dilated scutate base. Pores decurrent, very short, small, white.

On trunks. Victoria.

\*\* *Pileus* subsquamose or floccose.

**614. Polyporus grammacephalus.** *Berk. Hook. Journ.* 1842, 148. *Sacc. Syll.* vi., 5005.

Pileus at first obovate, wedge-shaped, then reniform, flattened (4-7 c.m. broad, 2 m.m. thick), pale umber, radiately virgate; stem lateral, abrupt at the base, but scarcely scutate (4 m.m. long, 1 m.m. thick), in a line with the pileus. Pores short, umber, mouth acute.

On trunks. Queensland. New Guinea.

var. **Emerici.** *Berk. in Grev.* x., 96.

Whitish ochre, pileus spatulate or reniform. Pores angular, dissepiments thin, soon broken.

On trunks. Queensland. New Guinea.

var. **Muelleri.** *Kalch. Grev. t.* 145, f. 25.

Whitish ochre, tan colour when dry; pileus thin, rigid. Pores of medium size, angular, unequal, mouth entire.

On trunks. N.S. Wales.

- 615. *Polyporus platotis*.** *B. & Br. Linn. Trans.* 1879, 401, *pl.* 45, *f.* 7. *Sacc. Syll.* 5007.

Pileus clavate, then plane, and infundibuliform, smooth, ochraceous, fragile, spongy, marked with radiating thin lines (5 c.m. broad); stem elongated, thickened upwards (7-8 c.m. long). Pores angular, descending at the base (200-300  $\mu$  broad), of the same colour as the pileus.

On wood. Queensland.

Apparently only an abnormal, distorted condition of *P. grammcephalus*.

- 616. *Polyporus dorcadideus*.** *B. & Br. Linn. Trans.* II., 57, *t.* 10, *f.* 16. *Sacc. Syll.* VI., 5008.

Pileus flabelliform, lobate,umber, pruinously velvety (8-9 c.m. broad, 7 c.m. long); stem short (2 c.m. long, 1 c.m. thick). Pores of medium size, hexagonal, dissepiments thin and torn (2 m.m. diam.).

On trunks. Queensland.

- 617. *Polyporus fusco-lineatus*.** *B. & Br. Linn. Trans.* 1879, *pl.* 45, *f.* 1. *Sacc. Syll.* VI., 5009.

Pileus thin, tough, flabelliform, ochraceous (4-6 m.m. thick), striate with radiating brown strigose lines; margin sinuate, incurved when dry; pores of medium size, irregular, tawny-brown ( $\frac{1}{2}$ -1 m.m. broad); stem depressed, ochraceous, thicker above, reticulated, tomentose below.

On trunks. Queensland.

- f. FRONDOSI.* *Pileus fleshy, firm, floccosely fibrous, zoneless, not indurated. Tufts central, stipitate, arising from a common base, more or less concrete. Pores seceding.*

- 618. *Polyporus frondosus*.** *Fr. Hym. Eur.* 538. *Sver. Svam. t.* 44. *Sacc. Syll.* VI., 5015.

Very much branched, fibrously fleshy, rather tough; pilei very numerous, dimidiate, rugose, lobed, intricately recurved, greyish, sooty-brown (tufts 15-30 c.m. broad and high, pilei  $1\frac{1}{2}$ -6 c.m. broad); stems growing together; pores small, acute, white as well as the stems.

On trunks and at their base. Tasmania.

- 619. *Polyporus intybaceus*.** *Fr. Hym. Eur.* 538. *Sacc. Syll.* 5017.

Very much branched, fleshy, rather fragile (15-30 c.m. broad); pilei very numerous, dimidiate, extended, sinuate, at length spatulate, gilvous, tawny; stems connate in a very short trunk; pores firm, obtuse, white, then tawny. Spores ovoid, hyaline, 4-5  $\times$  2-3  $\mu$ .

On trunks. Queensland.

- 620. *Polyporus confluens*.** *Fr. Hym. Eur.* 539. *Sver. Svamp. t.* 24. *Sacc. Syll.* VI., 5019.

Branching, fleshy but firm, fragile; pilei thick, dimidiate, imbricated, confluent, smooth, flesh colour, then yellowish, at



length darker, squamulose (tufts 30 c.m. and more broad, pilei 12-15 c.m. diam.); stems very short, confluent; pores short, minute, white, then pallid, as well as the stems. Spores 6-7  $\mu$  long.

On wood. Queensland. Lord Howe's Island.

**621. *Polyporus scabriusculus.*** Berk. Linn. Journ. XVIII., 385. Sacc. Syll. VI., 5026.

Stem cylindrical (2 in. long), repeatedly branched, branches 6 in. long; pilei spathulate, delicately pubescent, rather rough; pores broad ( $1\frac{1}{2}$  m.m.).

On trunks. Australia.

g. **LOBATI.** *Pileus fleshy, then tough and rather leathery, more or less zoned, fibrous within; pores adnate; tufts lateral, rather stipitate, much imbricated; stems more or less connate, or springing from a common tuberous base.*

\* *Substance pallid.*

**622. *Polyporus anthracophilus.*** Cooke Grev. XII., 16. Sacc. Syll. VI., 5043.

Imbricate and much divided, toughly coriaceous, becoming hard (tufts to 15 c.m. broad); pilei dimidiate, imbricated, and growing together, sinuately lobed, rather tomentose, at length adpressedly tomentose, bay-brown, attenuated behind into the whitish, unequal stems, slightly zoned near the margin; pores of medium size ( $\frac{1}{3}$ - $\frac{1}{2}$  m.m.), unequal, angular, decurrent, white; dissepiments thin, a little dentate or broken.

On burnt ground. Victoria. Queensland. S.W. Australia.

\*\* *Substance slightly coloured.*

**623. *Polyporus lætus.*** Cooke Grev. XII., 16. Sacc. Syll. VI., 5047.

Imbricated and much divided, coriaceous, tough, bright coloured (orange tawny); pilei dimidiate, imbricated, and grown together (7-15 c.m. broad), entire, broken up into adpressed, scaly zones, orange-red, verging on crimson or purple, at length becoming pale, confluent behind, in an unequal stem; margin acute; flesh fibrous, orange-red, thin (5 m.m. thick); pores of medium size, pallid, edge thin.

On trunks. Victoria.

h. **IMBRICATI.** *Pileus without pellicle, cheesy, at first soft and juicy, then dry and fragile, zoneless, pores seceding. Tufts sessile, at the base of trees, commonly dimidiate when growing horizontal, everywhere expanding from the centre, at first arising from an amorphous tubercle.*

**624. *Polyporus sulfureus.*** Bull. Fr. Hym. Eur. 542. Sver. Svamp. t. 88. Sacc. Syll. VI., 5050.

Cæspitose and much divided, of a juicy, cheesy consistence, soon growing pale (30-66 c.m. broad); pilei very broad, imbricated,

undulate, becoming nearly smooth, reddish-yellow; pores minute, plane, sulphur colour; spores ovoid, hyaline, slightly papillate,  $7-8 \times 4-5 \mu$ .

On trunks. Queensland. Tasmania.

**625. *Polyporus retiporus*.** Cooke Grev. XII., 15. Sacc. Syll. VI., 5054.

Cæspitose, much divided, forming large clumps, of a juicy, cheesy consistence, pale, ochraceous, fragile when dry; pilei very broad, imbricate, undulate, rather velvety, tomentose; flesh white, pores angular, very short, of medium size, dissepiments obtuse, net-like.

On trunks. Victoria. Queensland.

i. MOLLIS. *Anodermeous*. *Pileus cheesy, at first soft and watery, fragile.*

\* *Pileus tomentose.*

**626. *Polyporus tephronotus*.** Berk. Fl. Tasm. II., 252, t. 182, f. 5. Sacc. Syll. VI., 5064.

*Pileus* soft, tomentose, snow white, brown behind (50 m.m. broad, 35 m.m. long), hymenium white, then becoming a little cinereous; pores small, rounded ( $181-182 \mu$  diam.).

On rotten wood. N.S. Wales. Tasmania. (Fig. 54).

**627. *Polyporus epileucus*.** Fr. Hym. Eur. 545. Sacc. Syll. 5067.

*Pileus* soft and cheesy, then firm, pulvinate, roughly villose, whitish, similar within (8-12 c.m. broad, 2-6 c.m. thick); semi-orbicular, concave beneath, not fibrous within, scarcely zoned, pores at first undistinguishable, tubes minute (up to 18 m.m. long).

On rotten trunks. Queensland.

**628. *Polyporus corivalis*.** Berk. Linn. Journ. XIII., 162. Sacc. Syll. VI., 5072.

Imbricate; pilei shell-shaped, whitish, lineate, tomentose (12 m.m. broad, 6-7 m.m. long), hymenium concave; pores small, angular ( $150 \mu$ ).

On trunks. Queensland. S. Australia.

**629. *Polyporus verecundus*.** Berk. & Curt. Fun. Cub. No. 220. Sacc. Syll. VI., 5075.

*Pileus* soft, convex, white, then cinereous, tomentose (5-8 c.m. broad, 4-5 c.m. long); margin acute, hymenium pallid; pores small, roundish (1-7 m.m. diam.); edge obtuse, white within, tubes elongated.

On dead wood. Fiji.

**630. *Polyporus semidigitaliformis*.** Berk. Linn. Journ. XVI., 29. Sacc. Syll. VI., 5078.

Gregarious; *pileus* hoof-shaped, springing from a tomentose mycelium, whitish, rugose and tomentose (6-8 m.m. broad); pores large, lamellate behind.

On trunks. N.S. Wales.

- 631. *Polyporus Gunnii*.** *Berk. Fl. Tasm.* II., 253. *Sacc. Syll.* VI., 5079.

Pileus flabellate, thin, whitish, becoming dingy, tomentose, rather rugose and somewhat zoned (5-10 c.m.); substance snowy white; hymenium white, pores irregular, of medium size ( $\frac{1}{3}$ - $\frac{1}{2}$  m.m.).

On branches. Tasmania.

- 632. *Polyporus angustus*.** *Berk. Fl. Tasm.* II., 253, t. 182, f. 6. *Sacc. Syll.* VI., 5080.

Pileus narrow, growing again, in front pallid, rather tomentose, rough behind and brown, adnate or decurrent (12-18 m.m. long); hymenium white, pores small, angularly punctiform (149-150  $\mu$ ).

On rotten wood. Tasmania.

\*\* *Pileus smooth.*

- 633. *Polyporus fragilis*.** *Fr. Hym. Eur.* 546. *Icones t.* 182, f. 2. *Sacc. Syll.* VI., 5082.

White, spotted with brown when touched; pileus fleshy, fibrous, fragile, plane, depressed and kidney-shaped, rugose (to 5 c.m. broad), convex beneath, pores very thin, elongated, flexuous, intricate; spores  $8 \times 1 \mu$ .

On wood. Victoria.

- 634. *Polyporus stypticus*.** *Pers. Fr. Hym. Eur.* 546. *Icones t.* 181, f. 2. *Sacc. Syll.* VI., 5092.

Pileus fleshy, then corky, pulvinate, fragile, becoming even and smooth, whitish (12 c.m. broad,  $2\frac{1}{2}$  c.m. thick); margin obtuse, rather reddish; pores long, rounded, equal, white.

On trunks. W. Australia.

- 635. *Polyporus chioneus*.** *Fr. Hym. Eur.* 546. *Sacc. Syll.* VI., 5093.

White; pileus fleshy, soft, nearly even, smooth, without zones, often porrect behind; margin inflexed ( $2\frac{1}{2}$ -8 c.m. broad); pores short, minute, rounded, equal, entire; spores  $3\frac{1}{2} \times 1\frac{1}{2}$ -2  $\mu$ ; odour acidulous.

On trunks. Victoria. N.S.Wales. Queensland.

- 636. *Polyporus argentatus*.** *Cooke Grev.* xv., 20. *Sacc. Syll.* 5107.

Pileus from toughly fleshy to coriaceous, flattened, shell-shaped, even or papillate, slightly silky, white in front, cinereous brown behind (2-3 in. broad,  $\frac{1}{2}$  in. thick); margin rather acute, often whitish, faintly sulcate; flesh white, pores equal, rounded, of medium size, dissepiments thickened.

On trunks. Victoria. Queensland.

- 637. *Polyporus campylus*.** *Berk. Fl. Tasm.* II., 252, t. 182, fig. 7. *Sacc. Syll.* 5106.

Pileus palmate, lobed, white, becoming smooth (3  $\times$  4 c.m.); hymenium concave; pores small, irregular (318  $\mu$  diam.); margin rather obtuse.

On rotten wood. Tasmania.

- j. **DICHROI.** *Anodermeous.* *Pileus fleshy, tough, soft, elastic from the fibrosely floccose substance, villosely tomentose, pores rather adnate, coloured. Always soft and rather flexible.*

\* *Substance coloured.*

**638. Polyporus nidulans.** *Fr. Hym. Eur.* 548.

Pileus fleshy, very soft, rather pulvinate, villous, becoming smooth, zoneless, somewhat gilvous, of the same colour within; pores elongated, of middle size, unequal, angular, tawny brick-red.

On trunks. Queensland.

**639. Polyporus fædatus.** *Berk. Linn. Journ.* xvi., 41.  
*Sacc. Syll.* vi., 5123.

Pileus rather thin, kidney-shaped, without zones, umber, then sooty brown; margin pallid, radiately rugose, sterile (7-8 c.m. broad, 4-5 c.m. long), substance pallid, silky, pores punctiform, edge obtuse, pallid cinnamon (scarcely 300  $\mu$  diam.).

On trunks. Queensland.

**640. Polyporus rubidus.** *Berk. Hook. Journ.* 1847, 500.  
*Sacc. Syll.* vi., 5124.

Reddish, rosy-gilvous; pileus thin, coriaceous, rather reniform, sulcately zoned, unequal, pulverulent, silky (2 c.m. or more broad), substance of the same colour; pores small, short, punctiform.

On wood. Queensland. N.S.Wales.

**641. Polyporus gilvus.** *Schwz. Fr. Hym. Eur.* 548. *Sacc. Syll.* vi., 5129.

Pileus fleshy, tough, effusedly reflexed, soft, even, becoming smooth, gilvous; margin spreading, thin, acute (5-8 c.m. broad); pores minute, naked, entire, gilvous, then ferruginous, opaque.

On trunks. Queensland. W. Australia.

**642. Polyporus scruposus.** *Fries Epic.* 473. *Sacc. Syll.* vi., 5130.

Pileus corky, somewhat triquetrous, rough and scrupose, without zones, umber, becoming hoary, at length sulcate about the acute margin, with a depressed umber zone (13 c.m. broad, 20 c.m. long); pores minute, rounded, equal, ferruginous.

On dead wood. Victoria. Queensland. N.S.Wales. W. Australia. Tasmania.

**643. Polyporus isidioides.** *Berk. Hook. Journ.* ii., 415.  
*Sacc. Syll.* vi., 5131. = *P. stenoloma*, *Kalch.*

Pileus corky or woody, hard, dimidiate, sessile, or effused behind, gilvous, ferruginous, rough with thick tubercles, and once or twice sulcate (6-8 c.m. broad, 5 c.m. long); pores small, crowded, punctiform, cinnamon; substance tawny, ferruginous.

On trunks. W. Australia.

Only a variety of *P. scruposus*.

\*\* *Substance white.*

- 644. *Polyporus demissus.*** *Berk. Hook. Journ.* 1845, 52.  
*Sacc. Syll.* VI., 5140.

Pilei imbricate, hood-shaped, corky, dependent, spongy tomentose, pallid yellow, or tawny behind (12-13 m.m. long,  $2\frac{1}{2}$  c.m. broad); hymenium at length greyish tawny; margin sterile; pores roundish, minute, edge white and somewhat obtuse.

On rotten wood. W. Australia.

- 645. *Polyporus rhinocephalus.*** *Berk. Fl. Tasm.* II., 253, t. 182. *Sacc. Syll.* VI., 5141.

Pileus dimidiate, shell-shaped, thin, whitish, at first tomentose, then scabrous, veined, or aculeate (25 m.m. broad); pores white, then cinereous, minute (182  $\mu$ ).

On rotten wood. Tasmania.

- 646. *Polyporus adustus.*** *Fr. Hym. Eur.* 549. *Sacc. Syll.* VI., 5146.

Pileus fleshy, tough, thin, villose, pallid cinereous, effused and reflexed behind (sometimes wholly resupinate); margin straight, becoming black; pores minute, short, round, obtuse, pruinose, white, soon grey (and at length nearly black), obsolete at the margin.

On trunks. Victoria. Queensland.

- 647. *Polyporus dichrous.*** *Pers. Fr. Hym. Eur.* 550. *Sacc. Syll.* VI., 5152.

Pileus fleshy, tough, thin, soft, effused and reflexed, even, silky, white (2-4 c.m. diam.); margin of the same colour, straight; pores short, minute, round, cinnamon brown, obtuse.

On trunks. Victoria.

**k. *HISPIDI.*** *Anodermeous.* *Pileus at first spongy, watery, then firm and elastic, made up of stout, divergent fibres, so as to be everywhere bristly hispid; pores continuous with the fibres of the substance. Flesh commonly with an intermediate stratum, the exterior being hispid.*

\* *Substance coloured.*

- 648. *Polyporus hispidus.*** *Bull. Fr. Hym. Eur.* 551. *Sacc. Syll.* 5163.

Pileus compact, spongy, fleshy, dimidiate, pulvinate, hispid, ferruginous brown, internally divergently fibrous (10-15 c.m. broad); pores minute, rounded, rather distinct, fimbriate, paler. Spores  $5-6 \times 3 \mu$ .

On trunks. Queensland.

- 649. *Polyporus fruticum.*** *B. & C. Linn. Journ.* x., 310. *Linn. Trans.* 1., pl. 46, f. 9, 10. *Sacc. Syll.* 5169.

Pileus thin, soft, dimidiate, or fixed by the vertex, fibrously spongy, without zones, rhubarb-colour, substance radiately fibrous,

of the same colour (4 c.m. broad,  $2\frac{1}{2}$  c.m. long); hymenium ferruginous; pores small, angular, dissepiments thin, dentate ( $\frac{1}{3}$  m.m. diam.).

On branches. Queensland.

**\*\* Substance whitish.**

**650. Polyporus pelliculosus.** Berk. Hook. Journ. vi., 575. Sacc. Syll. vi., 5180.

Dark red, then brown, juicy, densely gregarious, shell-shaped (4-5 c.m. diam.), clad at first with dense strigose hairs, when denuded radiately striate; margin thin, incurved; hymenium paler; pores rather angular ( $\frac{1}{3}$ - $\frac{1}{2}$  m.m.) or confluent; dissepiments thin, soon torn.

On wood. Queensland. Tasmania.

**651. Polyporus spiculifer.** Cooke Grev. xv., 20. Sacc. Syll. vi., 5181.

Pileus fleshy, soft and watery, rather pulvinate ( $2\frac{1}{2}$ -5 c.m. and more diam.), sooty brown, turning black, even, rugulose when dry, everywhere beset with scattered, erect, obtuse spicules; flesh pallid, tubes elongated (5-7 m.m. long); pores minute, nearly equal, dissepiments thin.

On trunks. Victoria. (Fig. 55).

**652. Polyporus borealis.** Wahl. Fr. Hym. Eur. 552. Sacc. Syll. vi., 5187.

White, then yellowish; pileus spongy, then corky, compact, rather pulvinate, hairy, internally parallelly fibrous (4-6 c.m. broad); margin spreading; pores adnate, unequal, sinuous, and flexuous, torn, white. Spores  $4\frac{1}{2} \times 3 \mu$ .

On trunks. Victoria.

**653. Polyporus substuppeus.** B. & Cooke Linn. Journ. xv., 381. Sacc. Syll. vi., 5194.

Pileus dimidiate, decurrent behind, rugose, short, invested with tow-like flocci (12 m.m. long, 4 c.m. or more broad); when dry, pallid ochraceous, pores rather hexagonal, edge thin ( $\frac{1}{2}$  m.m. broad, but variable).

On wood. Queensland.

1. SUBEROSI. Pileus at the first rather fleshy, juicy, then indurated, covered by a thin crust; pores thin, at length somewhat seceding.

**\* Substance white.**

**654. Polyporus betulinus.** Fr. Hym. Eur. 555. Sacc. Syll. vi., 5207.

Pileus fleshy, then corky, hoof-shaped, obtuse, without zones, smooth, vertex obliquely umbonate, pellicle thin, evanescent (10 c.m. or more across); pores short, minute, unequal, at length parting away. Spores small hyaline.

On beech. Queensland.

- 655. *Polyporus portentosus*.** Berk. Hook. Journ. 1845.  
Sacc. Syll. vi., 5212.

Sessile, very large; pileus fleshy, at length friable, pulvinate, elevated at the vertex, quite smooth, without zones, covered with a thin tan-coloured cuticle (12-25 c.m. diam., 12 c.m. thick); margin rather thin, flexuous; hymenium convex, pores proportionately small, internally pallid, externally brown, at length receding, dissepiments thin (820  $\mu$  diam.); substance snowy white (often channelled by insects).

On trunks. Victoria. N.S.Wales. W. Australia. S. Australia. Tasmania.

- 656. *Polyporus eucalyptorum*.** Fr. Pl. Preiss. 135. Sacc. Syll. v., 5216.

Pileus dimidiate, adnate, hoof-shaped, without zones, substance thick, very soft, white, invested with a thin, smooth, evanescent, dark-brown crust (18-19 c.m. broad, 7-10 c.m. thick at the base); pores short, small, falling away.

On *Eucalyptus* trunks. Victoria. W. Australia.

- 657. *Polyporus strumosus*.** Fr. Epic. 462. Sacc. Syll. vi., 5220.

Pileus fleshy, tough, then very hard, convex, gibbous, without zones, sooty-brown, pruinose with grey; margin acute, turning black, internally fibrously zoned, greyish-white; pores short, small, crowded, sooty-brown, then grey, decurrent at the base.

On trunks. Victoria.

- m. LIGNESCENTES. *Pileus more or less concentrically sulcate or striate, and the substance, when growing, soft and juicy, then coriaceous, contracting when dry, and commonly curved.*

\* Substance white.

- 658. *Polyporus hypopolius*.** Kalch. Grev. x., 99. Sacc. Syll. vi., 5227.

Pileus coriaceous, woody, hard, effused and reflexed, somewhat shell-shaped or resupinate, covered with a rigid, chestnut coloured crust, rough with thick tubercles, zoned at the acute margin (2½-5 c.m. long, 10-12 c.m. broad); pores of medium size, short (1 line), rather angular, elongated and torn, white, then wood colour and hoary.

On trunks. Queensland.

- 659. *Polyporus cartilagineus*.** B. & Br. Linn. Journ. xiv., 49. Sacc. Syll. vi., 5232.

Pileus dimidiate or fixed at the centre, rufous, then sooty-brown, rather zoned, cuticle cartilaginous, tuberculose behind (2½ c.m. broad, 12-18 m.m. long); substance whitish, at length pale brown; pores minute (1-5 m.m. diam.).

On dead wood. Queensland.

**\*\* Substance pallid.**

† *Pileus rugose and zoned.*

- 660. Polyporus zonalis.** *Berk. Ann. Nat. Hist. x., 375.*  
*Sacc. Syll. vi., 5237.* = *P. micromegas, Mont.*

Corky, thin, imbricate, sessile, laterally connate, rigid; pilei semi-orbicular, with rounded lobes, repeatedly zoned, rugulose, pruinose, fawn-colour ( $2\frac{1}{2}$ -5 c.m. broad, 18-30 m.m. long); zones smooth, somewhat shining, rufous, margin acute (incurved when dry); pores very minute, brownish.

On dead wood. Victoria. Queensland.

- 661. Polyporus subzonalis.** *Cooke Grev. xvii.*

Suberous, rather thin, rigid, sessile; pileus reniform, or laterally connate (2-3 in. diam.), pubescent, at length smooth, radiately rugose, faintly concentrically zoned with numerous linear zones, wholly cream-coloured, substance similar; margin acute, strongly incurved, hymenium nearly of the same colour; pores punctiform, rounded,  $\frac{1}{8}$   $\mu$  diam.

On wood. Queensland.

- 662. Polyporus lignosus.** *Klotsch. Fr. Epicr. 471. Sacc. Syll. vi., 5240.*

Pileus rather fleshy, then corky or woody, flattened, concentrically sulcate, at first villose, rugose, pallid, adult becoming smooth and yellowish, pallid within; pores long, small, very thin, crowded, pallid within, about the surface tawny.

On trunks. Victoria.

- 663. Polyporus cubensis.** *Mont. Cuba 404. Sacc. Syll. 5241.*

Whitish, pallid. Pileus dimidiate, sessile, fleshy, then corky, rigid, plane, smooth, concentrically sulcate; margin obtuse, repand, convex beneath; pores round, small, equal, obtuse, of the same colour, then rufous; dissepiments thick.

On trunks. Queensland.

†† *Pileus even.*

- 664. Polyporus plebius.** *Berk. Fl. N. Zeal. II., 179. Sacc. Syll. vi., 5247.*

Pallid, imbricate; pileus dimidiate, pulvinate, delicately pubescent, without zones, corky (50 m.m. broad, 25 m.m. long), hymenium concave; pores minute, punctiform (182  $\mu$  diam.), edge obtuse.

On rotten wood. Queensland.

- 665. Polyporus testudo.** *B. & Br. Linn. Trans. II., 59, t. 10, f. 19. Sacc. Syll. vi., 5248.*

Pileus imbricate, rigid, pulverulent, here and there darkly striate and rough (8-12 m.m. broad, 12 m.m. long); pores



minute (scarcely visible to the naked eye), irregular, angular, with thin dissepiments.

On trunks. Queensland.

\* \* \* *Substance brown.*

**666. Polyporus anebus.** *Berk. Hook. Journ.* 1847, 504.  
*Sacc. Syll.* VI., 5253.

Pallid fawn-colour, pileus semi-orbicular, thin, coriaceous, delicately pruinose or velvety, slightly zoned (5 c.m. broad,  $3\frac{1}{2}$ -4 c.m. long); margin acute, substance of the same colour; pores small, rounded, rather short.

On wood. Queensland.

n. RESUPINATI. *Anodermeous; soft, resupinate, margin a little reflexed.*

**667. Polyporus ascoboloides.** *Berk. Linn. Journ.* XIII., 162.  
*Sacc. Syll.* VI., 5255.

Pileus resupinate, orbicular, rather thick, arising from a thick coriaceous stratum, scarcely reflexed, tomentose whitish ( $3\frac{1}{2}$ -4 m.m. broad), hymenium black; pores regular, hexagonal, small.

On trunks. Australia.

GENUS 24. **FOMES.** *Fr. Nova Symb.* 31.

Pileus at first woody, indurated (rarely soft and weeping), substance interwoven, floccose, covered with a rigid crust, without zones, but at length concentrically sulcate. Perennial fungi (commonly stratoses), reviving, but growing only by an annual stratum.

a. MESOPODES. *Pileus entire, smooth. Stem distinct, vertical, simple.*

\* *Stem smooth, turning black.*

**668. Fomes nigripes.** *Fr. Epic.* 435. *Sacc. Syll.* 5272.

Between corky and woody; pileus convex, plane, quite smooth, without zones, opaque, ferruginous-brown, not laccate; margin obtuse; stem rooting, smooth, laccate and shining, black; pores minute, equal, ferruginous-brown.

On trunks. N.S. Wales.

\* \* \* *Stem fuscous, pruinose or tomentose.*

**669. Fomes rudis.** *Berk. Fl. Tasm.* t. 182, f. 4. *Sacc. Syll.* 5281.

Stem subcentral (2-6 c.m. long), rooting in the wood, equal, brown, covered with a tawny pruinosity, then shining; pileus convex, rather depressed in the centre, orbicular, brown, pruinose like the stem, or minutely velvety, rugose (8-12 c.m. diam.); margin obtuse; pores brown, subrotund, of medium size, substance pallid, soft and spongy.

On rotten wood. Tasmania. New Caledonia.

**670. *Fomes pullatus*.** *Berk. Grev. xv., 21. Sacc. Syll. 5282.*

Pileus orbicular, rugose, sulcately zoned, at first glaucous, delicately velvety, at length brown (9 c.m. diam.); substance soft, umber; hymenium plane, black; pores small, rather hexagonal (350  $\mu$  diam.); stem elongated, irregular, pulverulent (13 c.m. long, 12 m.m. thick).

On the ground. Victoria. Queensland.

**671. *Fomes rugosus*.** *Nees Acta Nat. Cur. XIII., t. 7. Sacc. Syll. 5283.*

Pileus coriaceous, rigid, convex, then depressed, smooth, opaque, concentrically sulcate, and radiately corrugate, bay-brown, turning black; substance cinnamon; stem unequal, torulose, rooting, crustate, velvety pruinose; pores small, much crowded, dark brown, at first covered with a greyish brown floccose pruinosity.

On the ground. Victoria. Queensland. N.S.Wales.

b. **PLEUROPODES.** *Pileus horizontal, not circinate, smooth, with a varnished crust; stem simple, ascending, corticate, lateral, or excentric.*

\* *Stem laccate.*

**672. *Fomes amboinensis*.** *Fries Epic. 442. Sacc. Syll. 5300.*

Pileus between corky and woody, somewhat ear-shaped (form and size variable), rugose, tuberculate, smooth; stem lateral, very long, torulose, smooth, laccate, and shining, cinereous, becoming black; pores determinate, small, white, then brownish.

On trunks. Queensland.

var. **gibbosus.** *Fries Ep. 443. = Polyporus gibbosus. Nees Nora Acta Cur. XIII., t. 5. Sacc. Syll. 5303.*

Pileus between corky and woody, somewhat kidney-shaped, rugose, tuberculate; stem lateral, stout, torulose, smooth, opaque, reddish brown; pores determinate, minute, reddish brown.

On trunks. Queensland.

**673. *Fomes lucidus*.** *Fr. Hym. Eur. 537. Sacc. Syll. 5305.*

Pileus between corky and woody (5-15 c.m. broad), flabelliform, sulcately rugose, laccate and shining, as well as the lateral equal stem (15-25 c.m. long, or nearly obsolete), yellowish, then reddish chestnut brown; pores determinate, long, minute, white, then cinnamon.

At the base of stumps. Queensland. Tasmania. Fiji.

\*\* *Stem pruinose or velvety.*

**674. *Fomes superpositus*.** *Berk. Linn. Journ. XIII., 161. Sacc. Syll. 5315.*

Pileus shell-shaped (3½-4 c.m. broad), imbricate, rising from a common, lateral, cylindrical stem (12 c.m. long), pallid, pruinose,

narrowly zoned and sulcate; pores small, short; substance ochraceous.

On trunks. N.S.Wales.

- c. *MERISMOIDEI*. *Pilei very numerous, developed from a common trunk or tubercle, persistently tough; substance floccose, rather soft, fomentum-like. Pores adnate.*

**675. Fomes senex.** *Nees; Mont. Syll. 160. Sacc. Syll. 5335.*

Large. Pileus nearly plane, corky, chestnut brown, becoming smooth (6 to 20 in. across); margin acute, concentrically rugose, the ridges tuberculose; pores ferruginous, minute, longer than substance of the pileus.

On trunks. Victoria. Queensland. N.S.Wales.

- d. *FOMENTARIII*. *Pileus floccose, like amadou, at first without juice, not fleshy or spongy, covered with a hard horny crust; pores at length stratosse.*

\* *Substance white or whitish.*

**676. Fomes scansilis.** *Berk. Linn. Journ. xvi., 53. Sacc. Syll. 5342.*

Even; pileus pulvinate, brown, repeatedly deeply sulcate and ribbed, coffee colour; cuticle thin, rigid; substance thick, white, fibrous, descending in brown punctiform pores.

On trunks. Queensland. Tabiti.

\*\* *Substance pallid, wood coloured.*

**677. Fomes marginatus.** *Fr. Hym. Eur. 561. Sacc. Syll. 5352.*

Pileus between corky and woody, rather flattened, incrustated, concentrically sulcate, smooth, but greyish pruinose (10 c.m. broad), varicoloured, zonate to the pallid margin, tan coloured within; pores round, straw-coloured, mouth white, rufescent when bruised.

On trunks. Victoria. N.S.Wales.

**678. Fomes dochmius.** *B. & Br. Linn. Journ. xiv., 50. Sacc. Syll. 5359.*

Pileus dimidiate, oblique, hard, becoming smooth, zoned, banded, radiately rugose and lineate (9-10 c.m. broad, 6 c.m. long); margin tomentose; substance pallid; hymenium ochraceous white; pores punctiform.

On dead wood. Queensland.

**679. Fomes concavus.** *Cooke Grev. xix, 44.*

Pileus very hard, convexo-flattened, semi-orbicular, deeply decurrent and effused behind, becoming nearly black, concentrically sulcate, and somewhat rugose or tuberculate (4-6 in. diam.), comparatively thin ( $\frac{1}{2}$ - $\frac{3}{4}$  inch), covered with a hard crust. Substance

very thin and floccose, together with the elongated, stratosed tubes, wood-coloured, pores very minute, round, regular, punctiform, scarcely visible. Hymenium concave, pale, ochraceous; margin thin, incurved, flexuous, sterile.

On trunks. Queensland.

\* \* Substance tawny or bay-brown.

**680. *Fomes conchatus*.** *Fr. Hym. Eur.* 560. *Sacc. Syll.* 5385.

Pileus corky, tindery, thin, effused, rather shell-shaped, reflexed, concentrically sulcate, tomentose, bay-brown (2-5 c.m. or more); margin acute; hymenium concave; pores short, small; trama thin, of the same colour.

On trunks. Queensland. Victoria.

\*\* Substance umber or purple brown.

**681. *Fomes australis*.** *Fr. Hym. Eur.* 536. *Sacc. Syll.* 5394.

Pileus very hard, convexo-plane, dimidiate, sessile, undulate, tuberculose, smooth, incrustated, opaque, somewhat bay brown (very variable in size, sometimes very large), sterile, margin smooth, pores very long, minute, confluent stratosed, umber, mouth at first whitish.

On trunks. Victoria. Queensland. N.S.Wales. Tasmania. N. Zealand. New Guinea. Fig. 56.

var. *arculatum*. *Bres.*

Margin thicker and tubes shorter. Spores  $6-7 \times 4 \mu$ .

On trunks. Queensland.

**682. *Fomes chilensis*.** *Fr. Nova Symb.* 47. *Sacc. Syll.* 5396.

Pileus corky, hoof-shaped, dilated, with elevated ridges, concentrically tuberculose, and undulated (2 c.m. and more broad), brick red, becoming pale, substance soft, loosely floccose, umber, pores elongated, continuous, pallid, umber.

On trunks. Queensland.

**683. *Fomes applanatus*.** *Fr. Hym. Eur.* 537. *Sacc. Syll.* 5397.

Pileus flattened, tuberculose, obsoletely zoned, pulverulent or smooth, cinnamon, becoming hoary, cuticle crustaceous, rigid, at length fragile, very soft within, and loosely floccose (35 c.m. broad), margin swollen, white, then cinnamon; pores small, rather ferruginous; mouth whitish, brownish when bruised.

On trunks. Victoria. Queensland.

**684. *Fomes orbiformis*.** *Fries. Sacc. Syll.* 5400. *Fr. Epic.* 463.

Pileus hard, convex, orbicular, obliquely sessile, adnate behind, concentrically sulcate, crustaceous laccate, dark brown, pruinose with grey; pores very long, minute, becoming brownish.

On trunks. Victoria.

**685. *Fomes nigrolaccatus*.** *Cooke Grev. ix., 97. Sacc. Syll.*  
5401.

Pileus flabelliform, convexo-plane, corky or woody, sulcately rugose (20 c.m. long, 12 c.m. broad, 4-5 c.m. thick); margin waved, chestnut brown, then blackish, laccate, shining, then opaque, soft within, floccose; pores pallid, at length umber, rounded, small.

On dead wood. Queensland.

\*\*\* *Substance ferruginous.*

**686. *Fomes fomentarius*.** *Fr. Hym. Eur. 588. Sacc. Syll.*  
5409.

Pileus hoof-shaped, pulvinate, thick, remotely concentrically sulcate, smooth, opaque, sooty brown, becoming hoary, internally soft, floccose, ferruginous-brown (15 c.m. broad, 9 c.m. long); cuticle thick, quite hard, persistent; margin at first glaucous, then ferruginous; pores very long, minute, distinctly stratose, pruinose at first, then ferruginous; spores brownish.

On stumps. N.S.Wales.

**687. *Fomes igniarius*.** *Linn. Fr. Hym. Eur. 550. Sacc. Syll.* 5412.

Pileus at first tuberculose, globose (immarginate), even, with a thin, adpressedly floccose, hoary cuticle, then hoof-shaped, ferruginous brown, becoming blackish, opaque, cuticle concrete, roughly unequal, substance zoned, very hard, ferruginous, margin rounded, pores small, convex, stratose, cinnamon, stuffed with white when old, at first hoary; spores sphaeroid, hyaline, 6-7  $\mu$  diam.

On trunks. Victoria. Queensland. N.S.Wales. S. Australia. W. Australia. Tasmania.

**688. *Fomes rimosus*.** *Berk. Hook. Journ. 1845, 54. Sacc. Syll.* 5415.

Pileus woody, very hard, pulvinate, hoof-shaped, ringed by the strata, at length cracked, dark umber, deeply sulcate (nearly black when old); substance fibrous, hard, radiating (3-4 in. broad, 1½-2½ in. long). Pores very long, thin, not stratose (type specimens stratose), ferruginous brown, mouth rhubarb-coloured.

On gum tree trunks. N.S.Wales. W. Australia. Tasmania.

**689. *Fomes fulvus*.** *Scop. Fr. Hym. Eur. 559. Sacc. Syll.*  
5417.

Pileus woody or corky, very hard, triquetrous, even (not concentrically sulcate); at first hairy or villose, brown, then hoary (4-6 c.m. broad, 2-3 c.m. thick); pores short, rounded, minute, cinnamon, at first covered with a greyish yellow pruinosity.

On trunks. Victoria. Queensland. N.S.Wales. W. Australia.

**690. *Fomes gryphæformis*.** *Berk. Sacc. Syll.* 5424. *Berk. Hook. Journ.* 1845, 54.

Very hard; pileus hemispherical, shell-shaped, cinnamon (12-13 c.m. broad, 6-7 c.m. high); margin rather thin, lineate, rugose,

bay brown; hymenium concave, pores minute, stratoze, bay, rhubarb-coloured within.

On trunks. W. Australia.

**691. Fomes salicinus.** *Pers. Sacc. Syll.* 5429. *Fr. Hym. Eur.* 560.

Pileus woody, quite hard, undulate, smooth, greater part resupinate (to 30 c.m. broad); margin short, obtuse, spreading, cinnamon, becoming hoary. Pores minute, rounded, ferruginous-cinnamon.

On trunks. Queensland.

c. **IMPOLITI.** *Pileus dimidiate, woody, perennial, at first anodermous, floccose or pruinose, then indurated, and covered with a crust formed from the substance itself. Substance fibrous, radiating, descending into the crowded, elongated, but not stratoze pores.*

\* *Substance pallid.*

**692. Fomes hemileucus.** *B. & C. Sacc. Syll.* 5449. *B. & C. Linn. Journ.* x., 312.

Pileus corky, rather thick, rigid, dimidiate, delicately tomentose, white, slightly laccate and rufous behind (8 c.m. broad, 4 c.m. long), hymenium white; pores minute, rounded, edge obtuse ( $\frac{1}{2}$  m.m. diam.).

On stems. Queensland.

**693. Fomes exotephrus.** *Berk. Linn. Journ.* xvi., 49. *Sacc. Syll.* 5450.

Pileus hard, sulcately zoned, at first delicately tomentose, becoming smooth (6 c.m. broad); margin sulcate, rather prominent, obtuse, lobed; substance wood-colour; pores ferruginous, brown, minute.

On trunks. Queensland. Admiralty Island.

**694. Fomes contrarius.** *B. & C. Sacc. Syll.* 5451. *B. & Curt. Linn. Trans.* ii., 60, t. 11, f. 2-4. *Grer.* xv., p. 21.

Pileus somewhat zoned, fixed at the vertex, or subimbricate (3-5 c.m. broad), brown, at first ochraceous, then darker, slightly concentrically sulcate and depressed, thin, rigid, tomentose, at length becoming smooth; substance thin, wood coloured, fibrous radiate; tubes equal to the substance; pores minute, regular, rounded ( $\frac{1}{2}$  m.m. diam.); hymenium white, at length silvery grey.

On trunks. Queensland.

\*\* *Substance tawny or cinnamon.*

**695. Fomes tasmanicus.** *Berk. Fl. Tasm.* ii., 254. *Sacc. Syll.* 5452.

Pileus narrow, sulcate, pale brown, tomentose, hymenium and substance of the same colour; pores minute, punctiform (211-212  $\mu$  diam.).

On rotten wood. Tasmania.

- 696. *Fomes pullus.*** *Berk. & Mont. Berk. Dec. 13. Sacc. Syll. 5461.*

Small, rather imbricate, laterally confluent, hard; pileus dimidiate, extended, semi-orbicular, concave, delicately velvety above and minutely concentrically zoned, bay brown, as well as the hymenium; margin acute, rather rough; pores and substance ferruginous brown, angular, with grey mouth.

On branches of *jasmin*. Queensland.

\* \* \* *Substance rhubarb colour or ferruginous.*

- 697. *Fomes lineato-scaber.*** *B. & Br. Linn. Trans. II., 59, t. 11, f. 1. Sacc. Syll. t. 5165.*

Pileus dimidiate, descending behind, rigid, brown (10 c.m. broad, 6 c.m. long); margin pallid, frequently zoned, lineate radiate, rough; hymenium rhubarb colour; pores punctiform, dissepiments obtuse (300  $\mu$  diam.).

On trunks. Queensland.

- 698. *Fomes spadiceus.*** *Berk. Ann. Nat. Hist. 1839, 388. Sacc. Syll. 5466.*

Hard, coriaceous, or corky; pileus thin, bright-brown, minutely velvety, closely zoned (3 c.m. long, 6 c.m. broad); hymenium ferruginous, cinnamon; pores minute, rounded, cinnamon, becoming whitish.

On trunks. Queensland.

- 699. *Fomes inflexibilis.*** *Berk. Hook. Journ. 1856, 199. = Polyporus recurvus. Berk. Sacc. Syll. 5468.*

Pileus hoof-shaped, brown, cristate, sulcate, quite hard (5 c.m. broad); substance ferruginous; hymenium umber; pores punctiform.

On trunks. Queensland.

- 700. *Fomes linteus.*** *Berk. U.S. Expl. Exp. No. 96. Sacc. Syll. 5470.*

Hard, heavy; pileus dimidiate, sulcate, radiately cracked, brown, rendered pale by a whitish villosity; margin thin; substance ferruginous; hymenium cinnamon; pores minute, punctiform.

On bark. Queensland.

- 701. *Fomes pectinatus.*** *Klot. Linn. VIII., 485. Sacc. Syll. 5499.*

Pileus corky or woody, hard, triquetrous, above concentrically lamellate-plicate, tomentose, scurfy, ferruginous brown (2½ c.m. or more across); margin naked; pores small, short, obtuse, gillvous.

On trunks. Queensland.

- 702. *Fomes rubiginosus.*** *Berk. Ann. Nat. Hist. III., 324. = Polyporus Laurencii. Berk. Fl. Tasm. II., 254. Sacc. Syll. 5473.*

Horizontal, solid, sessile, thin, zoned, rugose, minutely velvety when young, ferruginous, when old tinged with brown; margin

rufescent, grey; substance ferruginous; hymenium unequal, ferruginous; pores minute, round.

On rotten wood. Tasmania.

\*\* Substance umber.

**703. Fomes Gourliei.** *Berk. Fl. Tasm.* II., 253. *Sacc. Syll.* 5477.

Dimidiate; pileus convex, sparingly zoned, velvety like tow, umber (25 m.m. broad); substance soft, corky, of the same colour, as well as the angular pores (500  $\mu$  diam.).

On bark. Tasmania.

**704. Fomes endapalus.** *Berk. Linn. Journ.* XIII., 163. *Sacc. Syll.* 5478.

Pilei imbricate, coriaceous, bay brown, longitudinally lineately rugose, delicately tomentose ( $2\frac{1}{2}$ -8 c.m. broad, 12 m.m. long); sterile, margin paler; hymenium of the same colour; pores minute, angular, elongated behind ( $\frac{1}{6}$  m.m. broad); substance soft.

On ? Queensland. N.S.Wales.

**705. Fomes Curreyi.** *Berk. Grev.* xv., 21. *Sacc. Syll.* 5481.

Pileus rigid, corky, or coriaceous, dimidiate, reniform, radiately strigose, rather scrupose, brown, rugose, with concentric elevated zones (4-8 c.m.); substance brownish; hymenium brownish, tawny; pores rounded, regular ( $\frac{1}{4}$  m.m. diam.); dissepiments rather thick.

On trunks. Queensland.

**706. Fomes strigatus.** *Berk. Hook. Journ.* 1837, 502. *Sacc. Syll.* 5480.

Pileus rigid, thin, semi-orbicular, brown, zoned, sprinkled with small, stiff hairs (8 c.m. broad, 5 c.m. long); substance of the same colour; pores small, short, rounded, brownish ( $\frac{1}{4}$  m.m.).

On trunks. Queensland.

*Substance colour unknown.*

**707. Fomes ponderosus.** *Kalch. Grev.* x., 99. *Sacc. Syll.* 5484.

Pileus woody, quite hard, dimidiate, sessile, imbricate, shell-shaped, covered with a hard crust, rather rough ( $2\frac{1}{2}$ -5 c.m. broad, 4-6 m.m. thick), lurid grey, at the base sooty-brown or brownish, margin thin, but rather obtuse, sub-deflexed; pores minute, rounded, umber, turning blackish.

On trunks. Queensland.

*f. LÆVIGATI.* Pileus dimidiate, woody (also at first dry), cuticle thin, becoming smooth (not distant and heterogeneous), rather polished. Pores crowded, not stratose, substance floccose-fibrillose, paler.



\* *Substance white or whitish.*

- 708. *Fomes annosus.*** *Fr. Hym. Eur.* 564. *Sacc. Syll.* 5487.

Pileus woody, convex, then flattened, rugose, tuberculose (10-13 c.m. long, 5-8 c.m. broad), of the current year brown and silky, of the previous season covered with a rigid, smooth, blackened crust, white within; pores of medium size, whitish; spores ovoid or oblong,  $5 \times 4 \mu$ .

On trunks. Queensland.

- 709. *Fomes compressus.*** *Berk. Hook. Journ.* 1845, 53. *Sacc. Syll.* 5491.

Small, obliquely compressed, hoof-shaped; pileus zoned, lineately rugose, at first light brown, at length dark brown ( $2\frac{1}{2}$  c.m. broad, 8-9 m.m. long), substance very narrow, whitish; hymenium oblique, white; pores strатose, small, punctiform, entire ( $250 \mu$  diam.).

On dead wood. Queensland. W. Australia.

- 710. *Fomes connatus.*** *Fr. Hym. Eur.* 563. *Sacc. Syll.* 4585.

Pilei woody or corky, effused, reflexed, imbricated, growing into each other, villous, white or cinereous (3-5 c.m., then confluent), substance white; pores strатose, minute, roundish, white.

On trunks. Queensland.

- 711. *Fomes hemitephrus.*** *Berk. Fl. N. Zeal.* II., 179. *Sacc. Syll.* 5497.

Pileus hoof-shaped, concentrically sulcate, purple brown, becoming cinereous, very delicately tomentose (5-10 c.m. or more), substance wood-colour, hymenium concave, whitish; pores punctiform, strатose.

On trunks. Victoria. N. Zealand.

- 712. *Fomes Palliseri.*** *Berk. Grev.* x., 98. *Sacc. Syll.* 5520.

Pileus fleshy, then tough and leathery, shell-shaped, even or papillate, slightly silky, white behind, cinereous-brown in front ( $5-7\frac{1}{2}$  c.m. broad, 1 c.m. thick), margin rather acute, often whitish, obscurely zoned; flesh white; pores white, equal, rounded, dissepiments thickened.

On trunks. Victoria. Queensland.

- 713. *Fomes ferreus.*** *Berk. Hook. Journ.* 1847, 502. *Sacc. Syll.* 5501.

Quite hard, corky; pileus of the current year fawn-coloured, velvety, of the previous season thin, even, nearly smooth, banded with brown, perennial, thick, bleached, rather rough (10 c.m. broad, 5 c.m. long), substance pallid wood-colour; pores small, pallid, equal, rather short.

On dead wood. Queensland. New Guinea.

- 714. *Fomes scopulosus.*** *Berk. Hook. Journ.* 1852, 143.  
*Sacc. Syll.* 5505.

Woody, hard ; pileus flabelliform, fixed by the vertex, whitish, zoned, rugose (12-13 c.m. broad, 5 c.m. long), hymenium coffee-colour ; pores punctiform, edge obtuse (250  $\mu$  diam.).

On dead wood. Queensland.

- 715. *Fomes oblinitus.*** *Berk. in Herb. Grev.* xv., 22. *Sacc. Syll.* 5507.

Pileus corky or woody, convex or flattened, kidney-shaped, smooth, nearly even (5-8 c.m. broad), variegated with inconspicuous concentric zones, red-brown ; margin obtuse, sterile beneath, substance wood-colour ; pores minute, roundish, equal ( $\frac{1}{3}$  m.m. diam.), pallid ochraceous.

On trunks. N.S.Wales.

- 716. *Fomes fasciatus.*** *Fries Epic. p.* 471. *Sacc. Syll.* 5499.

Pileus woody, thin, flattened, even, becoming smooth, ferruginous-brown, with black bands, internally pallid-brown ; pores minute, equal, obtuse, whitish.

On trunks. Queensland.

**\*\* Substance flesh-colour or reddish.**

- 717. *Fomes carneus.*** *Nees Acta Nat. Cur.* XIII., t. 3.  
*Sacc. Syll.* 5509.

Pileus effused and reflexed, woody, hard, thin, rugose, smooth, without zones, flesh-coloured, the same colour internally (8-10 c.m. long,  $2\frac{1}{2}$ -4 c.m. broad, 5-7 m.m. thick) ; pores minute, rounded, decurrent at the base.

On trunks. Victoria. S. Australia. Queensland.

**\* \* \* Substance umber.**

- 718. *Fomes cinereo-fuscus.*** *Curr. Linn. Trans.* XIX., 124.  
*Sacc. Syll.* 5512.

Pileus dimidiate, woody, very hard ; margin thin, incrassated at the base, cinereous-brown, rugose tuberculose ( $3\frac{1}{2}$ -5 c.m. broad) ; pores small, of the same colour.

On trunks. Queensland.

- 719. *Fomes homalopilus.*** *Mont. Syll.* 501.=*Polyporus carneofulvus*, *Berk. in Fries Novæ Symb. p.* 52.

Dimidiate, sessile ; pileus coriaceous or corky, rigid, thin, scabrous above, red-brown, with a very broad marginal zone, beneath quite plane (3-6 c.m. diam.) ; margin subrepand, spreading, substance floccose, rhubarb-coloured ; pores very small, short, obtuse, scarcely conspicuous, at length sooty-brown, internally paler and floccose.

On trunks. Queensland.

- 720. *Fomes incrassatus*.** *Berk. Linn. Journ.* xvi., 41.  
*Sacc. Syll.* 5523. = *P. reniformis*, *Morgan Bot. Gaz.* 1882,  
 136. *Sacc. Syll.* 5439.

Hard, kidney-shaped; pileus at first thin, without zones, at length thickened, rugose, repeatedly zoned about the margin, pulverulent, coffee-colour, cuticle hard (8 c.m. broad); hymenium cinnamon; margin at length sterile, sulcate; substance ferruginous; pores punctiform (300  $\mu$  broad), dissepiments obtuse, rigid.

On trunks. Queensland.

g. RESUPINATI. *Pileus resupinate, or with the margin reflexed.*

- 721. *Fomes obliquus*.** *Pers. Fr. Hym. Eur.* 570. *Sacc. Syll.* 5527.

Very broadly ambient (4-9 m.m. thick), casting off the bark, without flesh, pallid, then bay-brown, turning blackish, commonly with a cristate erect margin; pores long, small, rather pentagonal; spores sphaeroid, brown (5-7  $\mu$  diam.).

On trunks, *Eucalyptus*, etc. Victoria. Queensland. N.S.Wales. Mariatta.

- 722. *Fomes luridus*.** *Kalch. Grev.* x., 103. *Sacc. Syll.* 5528.

Wholly effused, closely adhering to the wood; margin determinate, firm; pores minute, rounded, obtuse, white, then livid or lurid, substance umber.

On branches. Queensland. N.S.Wales.

- 723. *Fomes bistratosus*.** *B. & Cke. Linn. Journ.* xv., 384.  
*Sacc. Syll.* 5529.

Effused, umber, rather rigid, with very little substance; pores stratose, punctiform.

On dead wood. Queensland.

#### GENUS 25. **POLYSTICTUS.** *Fr.*

Pileus coriaceous, inodermeous; intermediate stratum fibrillose, passing into the hymenophore, in which the pores are developed successively from the centre towards the circumference; at first superficial, punctiform, distinct, open, then excavated, crowded, porose, and vertically opposed to the substance of the pileus; trama formed from the hymenophore, vegetation concentric, zonate.

a. PERENNES. *Stem central or lateral, stem anodermeous, substance and spores somewhat ferruginous.*

- 724. *Polystictus tomentosus*.** *Fr. Hym. Eur.* 530. *Sacc. Syll.* vi., 5535.

Pileus corky, hard, deformed, without zones, persistently tomentose (12 c.m. broad), as well as the unequal stem, brown; pores small, equal, obtuse, entire, at first covered with a whitish bloom.

On the ground. Victoria. Queensland.

- 725. *Polystictus luteonitidus*.** *Berk. Hook. Journ.* 1856, 175.  
*Linn. Trans.* 1., 400, t. 46, f. 7-8. *Sacc. Syll.* vi., 5538.

Pileus rugose, yellow, silky, irregularly lobed, thickly zoned, at first rather velvety (5 c.m. broad); stem deformed, with a spongy coating (5 c.m. long, 8-12 m.m. thick); pores punctiform, olive yellow.

On the ground. Queensland.

- 726. *Polystictus perennis*.** *Linn. Fr. Hym. Eur.* 531.  
*Sacc. Syll.* 5543.

Pileus coriaceous, tough, plane, then infundibuliform, velvety, becoming smooth, zoned, cinnamon, then bay-brown (3-6 c.m. broad); stem rather firm, thickened downwards, velvety ( $2\frac{1}{2}$  c.m. long); pores small, angular, acute, at first with a whitish bloom, then naked and torn. Spores ovoid, hyaline ( $4.5 \times 2\frac{1}{2} \mu$ ).

On the ground. Queensland.

- 727. *Polystictus cinnamomeus*.** *Jacq. Collect.* 1., 116, t. 11. *Bres. Trid.* t. 99. *Sacc. Syll.* 5542.

Wholly, both without and within, bright cinnamon, hymenium paler; stem velvety; pileus plane, depressed or rather infundibuliform, zoned, margin sometimes fimbriate; hymenium sterile about the margin; pores rather large, angular (pentagonal or hexagonal). Spores ellipsoid,  $6.7 \times 4.5 \mu$ , yellowish.

In woods, amongst moss. Australia.

- 728. *Polystictus oblectans*.** *Berk. Hook. Journ.* 1845, 51.  
*Sacc. Syll.* vi., 5545.

Pileus thin, coriaceous, depressed, incised, repand, zoned about the centre, strigosely striate, shining, bright cinnamon ( $3\frac{1}{2}$ -4 c.m. broad); stem central, velvety, reddish-brown ( $2\frac{1}{2}$  c.m. high, 2-4 m.m. thick); pores small, dentate, cinnamon.

On sandy soil. Victoria. Queensland. W. Australia. Tasmania.

- 729. *Polystictus bulbipes*.** *Fr. Pl. Preiss.* 135. *Sacc. Syll.* vi., 5546. — *P. cladonia*. *Berk. Hook. Journ.* 1845, 51. *P. perdurans*. *Kalch. Grev.* ix., p. 1.

Cinnamon; pileus between coriaceous and membranaceous, flaccid, regular, fibrously radiate, of one colour ( $2\frac{1}{2}$ -5 c.m. broad); disc umbilicate; margin reflexed dentate; stem regular, cylindrical, velvety, bulbous ( $2\frac{1}{2}$  c.m. long); pores crowded, thin, entire, at first tawny, then cinnamon, not at first pruinete.

On the ground. Victoria. W. Australia. Tasmania.

- 730. *Polystictus parvulus*.** *Klot. Linn.* 1833, 483. *Sacc. Syll.* 5548.

Pileus between coriaceous and membranaceous, deeply and acutely umbilicate, obsoletely silky, zoned, bay-brown (8-16 m.m. diam.); margin reflexed and torn; stem thin ( $1.2\frac{1}{2}$  c.m. long),

rather tuberous, velvety; pores decurrent, large, angular, thin, at length torn, cinnamon.

On the ground. Victoria.

b. SACRI. *Pileus coriaceous or papery, dry, zoned; stem with an encrusted bark.*

**731. Polystictus quadrans.** *B. & Br. Linn. Trans. i., 1879, 400.*

*Pileus rigid, smooth, thin, sulcate, zoned, dark ochraceous; margin brown (1-1½ c.m. diam.); stem short, excentric, of the same colour as the pileus; pores minute, round, paler.*

On wood. Queensland.

**732. Polystictus xanthopus.** *Fries Epicr. 437. Sacc. Syll. vi., 5565. = P. cupreo-nitens. Kalch. Myc. Univ. No. 1702.*

*Pileus coriaceous, papery, infundibuliform, rather oblique, even or rugose, smooth, zoned, shining, bay-brown (4-6 c.m. broad); stem short, smooth, shining, yellowish (5-10 m.m. long), dilated at the base; pores small, rounded.*

On branches. Victoria. Queensland. N.S.Wales. New Guinea.

c. DISCIPEDES. *Pileus coriaceous, somewhat kidney-shaped, zoned, stem lateral (sometimes elongated), usually very short, dilated into a disc at the base.*

\* DILATATI. *Pileus dry.*

**733. Polystictus flabelliformis.** *Klotsch. Linn. viii., 483. Sacc. Syll. vi., 5569.*

*Pileus between coriaceous and membranaceous, plane, then depressed, zoned, clad with a dingy evanescent tomentum, becoming smooth, somewhat bay-brown (4-10 c.m. broad); stem very short, lateral, abruptly black at the base, pores minute, rounded, whitish.*

On dead wood. Victoria. Queensland. N.S.Wales. Fiji. N. Caledonia.

**734. Polystictus porphyrites.** *Berk. Hook. Journ. 1856, 196. Sacc. Syll. 5571.*

*Thin, coriaceous; pileus flabelliform, with ochraceous zones, shining brown, becoming purplish (5 c.m. and more broad), margin thin; stem short, almost of the same colour (8-9 m.m. long), even; hymenium pallid, pores minute, rather angular.*

On rotting branches. Queensland.

**735. Polystictus Adami.** *Cooke Enum. Poly. 137. Sacc. Syll. vi., 5572. = Polyporus dilatatus. Berk. Hook. Journ. 1847, 499, not Leveille.*

*Pileus lateral, spathulate, thin, coriaceous, zoned, becoming smooth, bay-brown (3 c.m. broad, 3½-4 c.m. long); stem long, dilated upwards, mealy, yellow (4-4½ c.m. long), hymenium determinate, pallid; pores minute.*

On rotten wood. Queensland. N.S.Wales.

**736. *Polystictus mutabilis*.** *B. & C. Grev.* I., 38. *Sacc. Syll.* VI., 5574.

Pileus coriaceous, rigid, flabelliform, or spatulate, zoned, yellowish-white, at first delicately silky, striate, tomentose, at length becoming smooth, thickly zoned, narrowed downwards into the stem (7 c.m. long and broad); stem lateral of variable length; margin quite thin, lobed; hymenium white; pores small punctiform, whitish.

On wood. Queensland.

**737. *Polystictus luteus*.** *Nees Acta Nat. Cur.* XIII., t. 4, f. 2. *Sacc. Syll.* VI., 5577.

Pileus thin, rigid, coriaceous, flabelliform, or laterally connate, yellowish, smooth (2½-5 c.m. broad, scarcely 1 m.m. thick); stem marginal, unequal, dilated at the base, yellowish, pores minute, rounded, cinereous, then yellowish.

On dead wood. Queensland. N.S.Wales.

**738. *Polystictus carneo-niger*.** *Berk. Grev.* XII., 15. *Sacc. Syll.* VI., 5581.

Pileus reniform, thin, black, radiately rugose (5 c.m. broad), obscurely zoned; stem short or long, of the same colour, velvety brown downwards, discoloured at the base; hymenium flesh coloured, pores minute, short, dissepiments thick.

On wood. Queensland.

**739. *Polystictus nephridius*.** *Berk. Hook. Journ.* VIII., 1856, 195. *Sacc. Syll.* VI., 5582.

Small, thin; pileus veined, smooth, kidney-shaped, bay brown (1-5 c.m. broad); stem very short, black; pores minute, punctiform, hymenium pallid.

On branches. Queensland.

**740. *Polystictus affinis*.** *Nees in Fr. Epicr.* 445. *Sacc. Syll.* VI., 5584.

Pileus papery, flabelliform, rigid, chestnut brown, with darker zones (5 c.m. broad), stem lateral, equal, thin, chestnut brown, scutate at the base, smooth (2½ c.m. long), pores determinate, short, small, white, then tan colour.

On branches. Queensland. N.S.Wales.

**741. *Polystictus stereinus*.** *B. & C. Linn. Journ.* x., 308. *Sacc. Syll.* VI., 5585. = *P. cognatus*, *Kalch.*

Flabelliform, rigid when dry and inflexed. Pileus thin, with many zones, smooth, chestnut red (18-25 m.m. broad and long); stem disciform, hymenium white; pores minute, rounded, edge pruinose.

On trunks. Queensland. N.S.Wales.

- 742. *Polystictus intonsus*.** *Berk. Fl. Tasm.* II., 254. *Sacc. Syll.* VI., 5591.

Pileus flabelliform, thin, velvety, brown (2 c.m. diam.), stem excentric, short (5 m.m. long); hymenium white; pores minute, punctiform, decurrent (142  $\mu$  diam.).

On rotten wood. Tasmania.

- 743. *Polystictus brunneolus*.** *Berk. Sill. Journ.* 1851, 94. *Hook. Journ.* III., 187. *Sacc. Syll.* VI., 5616.

Between corky and coriaceous; pileus thin, reniform or flabellate, pallid fawn colour, thickly zoned, silky and shining (5½ c.m. broad, 3½-4 c.m. long); stem very short; hymenium and substance of the pileus nearly of the same colour; pores minute, punctiform, dissepiments rather obtuse.

On trunks. Queensland.

- 744. *Polystictus peroxydatus*.** *Berk. Linn. Journ.* XVI., 39. *Sacc. Syll.* VI., 5623.

Thin, almost orbicular, rust-coloured, powdery; pileus slightly zoned, rugose; stem short, thick; hymenium convex, ferruginous, pores angular (¼ m.m.), substance rhubarb-colour.

On trunks. N.S.Wales.

- 745. *Polystictus libum*.** *Berk. Linn. Journ.* XIII., 163. *Sacc. Syll.* VI., 5630.

Pileus coriaceous, quite smooth, polished, fixed behind by a disc, lobed, deeply umbilicate, rather zoned, white, last zone radiate, margin yellowish (8 c.m. broad, 6 c.m. long); pores ochre, angular (½ m.m. broad), dissepiments rather rigid, acute.

On wood. Queensland. N.S.Wales.

- 746. *Polystictus sanguineus*.** *Linn. Meyer. Fr. Epicr.* 444. *Sacc. Syll.* VI., 5631.

Vermilion red; pileus coriaceous, thin, reniform, smooth, shining, obsoletely concentrically sulcate (2½-10 c.m. broad); stem lateral, short, orbicularly dilated at the base; pores minute, rounded.

On trunks. Victoria. Queensland. N.S.Wales. W. Australia. S. Australia. Tasmania. Lord Howe's Island. New Guinea.

**\*\* HYDROPHILI.** *Pileus hygrophanous, incurved when dry.*

- 747. *Polystictus rasipes*.** *Berk. Linn. Journ.* XVI., 43. *Sacc. Syll.* VI., 5634.

Pileus flabelliform, concave, silky lincate, rather velvety, zoned, rufous when dry, incurved (18-25 m.m. broad); stem short, flattened (6-7 m.m. long), rather hispid; hymenium pallid; pores minute, angular, dissepiments thin.

On trunks. Queensland.

d. **PROLIFICANTES.** *Pileus coriaceus, thin, more or less proliferous, much divided, more or less protracted into an indefinite (sometimes deficient) stem.*

**748. Polystictus laceratus.** *Berk. Ann. Nat. Hist. 1839, 392. Sacc. Syll. vi., 5639.*

Effused and reflexed, thin; pileus zoned, smooth, rugose, striate, wood-colour (5 c.m. long, 18 m.m. broad); pores rather large, angular, soon torn, tawny, dissepiments thin, toothed.

On branches. Queensland. N.S.Wales. N. Guinea.

**749. Polystictus dispar.** *Kalch. Austr. Fungi No. 82.*

Pilei imbricated, confluent, base wedge-shaped, sessile, flabellate, lobed, convexo-plane, radiately fibrous-striate, and somewhat silky, slightly zoned to the margin, tan-coloured; pores about the margin superficial, minute, almost sterile, towards the base protracted into lamellose teeth, yellowish white.

On trunks. Victoria.

**750. Polystictus elongatus.** *Berk. Hook. Journ. 1842, 149. Sacc. Syll. vi., 5640.*

Pileus wedge-shaped, rounded in front and lobed, attenuated behind, thin, coriaceous, tomentose, becoming smooth, pale ochre (5-6 c.m. long), zones darker, lineate, striate; hymenium concave, rather rufescent; pores minute, dissepiments thin, torn; spores white.

On dead leaves. Victoria. Queensland.

var. **Hodgkinsoniae.** *Kalch. Grev. t. 145, f. 24.*

Pileus rigid, spathulate, densely streaked with elevated radiating striae, at first silky, then minutely warted, margin acute; stem short, disciform; pores minute, angular, toothed and torn, white, then yellowish.

On dead wood. Queensland. N.S.Wales.

**751. Polystictus Beckleri.** *Berk. Linn. Journ. xiii., 162. Sacc. Syll. vi., 5125.=P. scobinaceus. Berk. in Herb.*

Thin, dimidiate, whitish or ochraceous, effused behind, very minutely scabrous, margin thin, a little inflexed (2 c.m. diam.); pores small, angular (120  $\mu$  diam.).

On dead wood. N.S.Wales. New Guinea.

**752. Polystictus ornithorhynchi.** *Kalch. Grev. t. 145, f. 23. Sacc. Syll. vi., 5642.*

Pilei subcaespitose, thin, coriaceous, obovate, cuneate, without zones, villose, tomentose, rusty umber, attenuated into a short or obsolete stem of the same colour (2 $\frac{1}{2}$  c.m. broad); pores decurrent, short, rounded, umber, substance cinnamon.

On trunks. N.S.Wales.

**753. Polystictus multilobus.** *Kalch. Grev. x., 96. Sacc. Syll. vi., 5644.*

Pileus coriaceous, thin and rigid, somewhat reniform, narrowed into a lateral very short stem, rather rugulose, pubescent, then



smooth (7-12 c.m. long or broad), white, tan-colour; margin lobed, lobes rounded, without zones, imbricated when old; pores minute, rounded, obtuse, short, and as well as the substance, white.

On trunks N.S. Wales.

- 754. *Polystictus Friesii*.** *Klotsch. Linn. VIII.*, 487, t. 11.  
*Sacc. Syll. VI.*, 5646.

Pileus coriaceous, thin, expanded from a narrow base, flabelliform, lobed, densely concentrically striate, silky, gilvous, papery about the margin (3-5 c.m.), pores unequal, torn and dentate, brown, marginal ones entire.

On trunks. Tasmania.

- 755. *Polystictus radiato-rugosus*.** *Berk. Ann. Nat. Hist. III.*, 323. *Sacc. Syll. VI.*, 5648.

Densely imbricated; pilei horizontal, thin, at length even, radiately rugose, dingy white or grey (6 c.m. broad), flesh white, fibrously coriaceous, but fragile, tubes equal in length to the thickness of the flesh, of medium size, white within, irregular, mouth often eroded.

On trunks. Tasmania.

- 756. *Polystictus gallo-pavonis*.** *B. & Br. Linn. Trans. Sacc. Syll. VI.*, 5656.

Pileus coriaceous, thin, rigid, flattened, conchiform, becoming even, slightly pubescent, greyish fawn colour, lineately zoned (3 × 4 c.m. diam.); margin acute, brownish; pores small, angular, ochraceous.

On trunks. Queensland.

- e. FUNALES. *Dimidiate, sessile, intermediate stratum coriaceous, upper stratum composed of loose, coarse fibres.*

- 757. *Polystictus leonotis*.** *Kalch. Grev. IV.*, 73. *Sacc. Syll. VI.*, 5663. = *Trametes leonotis*. *Fries.*

Pilei spongy, fleshy, imbricate and grown together, plano-convex, strigosely hairy, without zones, but here and there obsoletely sulcate, dark ferruginous brown; margin rather obtuse, repand; pores small, rounded, pallid cinnamon; substance coloured.

On trunks.

- 758. *Polystictus funalis*.** *Fr. Epic. 450.* *Sacc. Syll. VI.*, 5665. = *Trametes funalis*, *Fries.*

Pileus fibrously spongy, sessile, conchate, ferruginous, wholly resolved into rigid, much branched, cord-like fibres (6-10 c.m. diam.); pores thin, unequal, torn and toothed, pallid, then brown.

On trunks. Queensland.

- f. STUPOSI. *Pileus flocculose, then becoming smooth, or depressedly villose, unequal, without zones, substance fibrously woody or like tow. Pileus always dry.*

\* *Substance white.***759. *Polystictus biformis.*** *Fr. Epicr.* 475. *Sacc. Syll.* VI., 5688.

Imbricated; pileus effused, reflexed, tow-like, coriaceous, soft, villous tomentose, white, not zoned, at first even, then concentrically sulcate; margin entire, acute (5-10 c.m. broad,  $2\frac{1}{2}$ -5 c.m. long); pores rather large, acute, pallid wood-colour, at length torn and toothed (sometimes violet-brown).

On trunks. Victoria.

**760. *Polystictus hololeucus.*** *Kalch. Hedw.* xv., 114. *Sacc. Syll.* VI., 5689.

Wholly white; pileus floccosely corky, dimidiate, sessile, convex, plane beneath, concentrically sulcate, soft to the touch, floccose, then smooth; margin acute, white (10-14 c.m. long, 3-4 c.m. thick), flesh tinder-like, white; pores long, of medium size, rounded, entire, white, then yellowish.

On trunks. Victoria.

**761. *Polystictus proteiformis.*** *Cooke Grev.* XIV., 81. *Sacc. Syll.* VI., 5693. = *Polyporus proteus*, *Kalch. Grev.* x., 5693.

Pilei effused and reflexed, tow-like, coriaceous, white within, imbricate and grown together, or entire and orbicular, adnate at the middle, otherwise free, at length confluent in a plane stratum, slightly concentrically sulcate; margin acute, adpressedly pubescent, white, becoming smooth with age, and gilvous behind (single pilei  $2\frac{1}{2}$ -5 c.m. broad, then confluent, 10-13 c.m. long); pores minute, rounded, obtuse, wood-colour, then becoming brownish or gilvous.

On trunks. Victoria.

\*\* *Substance pallid.***762. *Polystictus seriatus.*** *Kalch. Grev.* x., 102. *Sacc. Syll.* VI., 5696.

Tow-like, substance pallid wood-colour, pilei semiorbicular, rigid, plane on both sides, and mostly seriatly connate, concentrically sulcate, radiately rugose or nodulose, powdery velvety, brick-red or gilvous, becoming brownish ( $2\frac{1}{2}$ -4 c.m. long, 2-4 m.m. thick); margin rather obtuse; pores minute, rounded, isabelline, verging on flesh-colour.

On trunks. Victoria.

**763. *Polystictus cristatus.*** *Cooke Grev.* x., 132 (*Trametes*). *Sacc. Syll.* VI., 5700.

Broadly effused, with the margins broadly reflexed; pilei thin, bright ochre, flexible, crested with fimbriate, nearly erect hairs; margin acute (3-5 c.m. deep, 6-10 c.m. long); pores angular, short ( $\frac{2}{3}$  m.m. diam.), dissepiments more or less toothed, of the same colour.

On trunks. Queensland.

- 764. *Polystictus acutus*.** *Cooke Grev. x.*, 132. (*Trametes*) *Sacc. Syll. vi.*, 5702.

Effused, margin broadly reflexed, pileus thin, pallid ochraceous, flexile; substance interwoven, strigose; margin very acute, strigosely silky, pallid (2 c.m. deep, 6-10 c.m. long); pores of medium size, rounded, short ( $\frac{1}{3}$  m.m. diam.); dissepiments rigid, rather thick, entire, darker.

On branches. Queensland. N.S.Wales.

- 765. *Polystictus extensus*.** *Berk. in Herb. Sacc. Syll. vi.*, 5703.

Pileus coriaceous, effused, reflexed, radiately strigose, slightly concentrically zoned, thin, ochraceous-olive; margin thin, acute, sinuate, crispate, or lobed (4 c.m. deep, 10-20 c.m. long). Substance and hymenium of the same colour; pores angular, rather large, unequal ( $\frac{1}{3}$ - $\frac{2}{3}$  m.m. diam.); dissepiments thin, rigid.

On trunks. Queensland.

- 766. *Polystictus versatilis*.** *Berk. Hook. Journ. i.*, 150. (*Trametes*) *Sacc. Syll. vi.*, 5704.

Very long, effused; margin broadly reflexed; pilei thin, whitish, flexible; substance very thin, of interwoven fibres; margin acute, strigosely silky, pale bay (3 x 4 c.m. or confluent); pores of medium size, angular, or sinuous; dissepiments more or less elongate and toothed, nearly of the same colour.

On rotten wood. Queensland. N.S.Wales.

\*.\* *Substance flesh colour or lilac.*

- 767. *Polystictus lilacino-gilvus*.** *Berk. Ann. Sci. Nat. III.*, 324. *Sacc. Syll. vi.*, 5708.

Somewhat imbricated, between corky and coriaceous, horizontal, delicate; pilei rugose, marked with elevated fibrous lines, more or less zoned near the acute margin, brown when old (7 $\frac{1}{2}$  c.m. broad, 3 $\frac{1}{2}$  c.m. long); hymenium greyish lilac; pores of the same colour, irregular, shallow towards the margin, which is sterile; substance rosy lilac.

On rotten wood. Victoria. Queensland. W. Australia. Tasmania. New Guinea.

- 768. *Polystictus Feei*.** *Fries Epic. 476. Sacc. Syll. vi.*, 5706.

Pileus between corky and coriaceous, nearly plane, unequal, adpressedly villose, zoned, brown, becoming hoary (6-15 c.m. broad); substance, and minute roundish pores, flesh colour.

On trunks. Victoria. N.S.Wales. Queensland. W. Australia. Tasmania.

- 769. *Polystictus eucalypti*.** *Kalch. Grev. IV.*, 73. *Sacc. Syll. vi.*, 5709.

Pileus fleshy, then corky (deformed), velvety, soft to the touch, without zones, opaque, even, colour peculiar, varying from

umber or bay to violet; pores rather minute, rounded, entire, rosy-pruinose; substance purple violet.

On trunks of *Eucalyptus*. Victoria. Queensland.

\*\* Substance red or purple.

**770. *Polystictus cinnabarinus*.** Jacq. Fr. Hym. Eur. 503.  
Sacc. Syll. vi., 5711.

Pileus corky, convexo-plane, a little zoned, rugulose, pubescent, becoming smooth, vermilion, growing pale, internally floccose and darker (6-8 c.m. broad, 2 c.m. thick); pores round, of medium size, bright vermilion.

On trunks, etc. Victoria. Queensland. W. Australia. S. Australia. Tasmania. New Guinea.

\*\*\* Substance yellowish.

**771. *Polystictus radiatus*.** Fr. Hym. Eur. 565. Sacc. Syll. vi., 5717.

Pileus corky, coriaceous, rigid, radiately rugose, at first velvety, brown, then smooth, ferruginous brown; margin spreading, repand (2-3 c.m. broad); pores minute, pallid, with a silvery lustre, at length ferruginous. Spores 4-6  $\times$  3-4  $\mu$ .

On trunks. Victoria. Queensland.

\*\*\* Substance ferruginous brown.

**772. *Polystictus venustus*.** Berk. Hook. Journ. 1845, 55.  
Sacc. Syll. vi., 5732.

Imbricate, forming elongated tufts; pilei reflexed, coriaceous, zoned, whitish, zones darker, fasciculately tomentose in front, becoming almost bare behind; margin rather brownish; hymenium purple; pores of medium size, variable; dissepiments thin and torn.

On trunks, etc. Queensland. W. Australia.

**773. *Polystictus floridanus*.** Berk. Ann. Nat. Hist. x., 376.  
Sacc. Syll. vi., 5733.

Pale bay; pilei rather flabellate, laterally connate, thin, coriaceous, zoned, pubescent; zones becoming smooth (5 c.m. broad, 3½ c.m. long); pores small, irregular, rather toothed; substance gillvous-bay.

On trunks. Queensland.

g. CORIACEI. *Pileus dimidiate, sessile, coriaceous, zoned; substance tough, floccose.*

a. VERSICOLORES. *Substance white.*

\* *Genuini.*

**774. *Polystictus versicolor*.** Linn. Fr. Hym. Eur. 568.  
Sacc. Syll. vi., 5741.

Pileus coriaceous, thin, rigid, flattened, depressed behind and even, velvety, shining, variegated with other coloured zones (3-6

c.m. broad); pores minute, rounded, acute and torn (when old), white, then pallid (with a tinge of yellow).

On trunks. Victoria. Queensland. N.S.Wales. Tasmania.  
Very variable in colour.

**775. *Polystictus illotus*.** *Kalch. Grev. x.*, 102. *Sacc. Syll. vi.*, 5755.

Pileus between coriaceous and membranaceous, flaccid, softly velvety and tomentose, concentrically sulcate, dingy grey, turning brownish; pores minute, angular; dissepiments thin, at length in some places toothed and torn, dirty white.

On trunks. Victoria.

**776. *Polystictus obstinatus*.** *Cooke Grev. xii.*, 17. (Trametes)  
*Sacc. Syll. vi.*, 5758.

Pileus coriaceous, woody, becoming hard, thin, convexo-plane, or depressed, pallid, rather cinereous, velvety, variegated with narrow zones, which become naked (5-8 c.m. broad, 2-3 m.m. thick); margin acute, entire; pores round, at length elongated behind ( $\frac{1}{2}$  m.m. diam.), toothed, wood colour, often oblique.

On trunks. Queensland.

**\*\* *Hirsuti*.**

**777. *Polystictus hirsutus*.** *Fr. Hym. Eur.* 567. *Sacc. Syll. vi.*, 5760.

Pileus between corky and coriaceous, convexo-plane, hirsute, with rigid hairs of one colour, but zoned with concentric furrows, whitish, then tawny (5-6 c.m. long, 3-4 c.m. broad); pores rounded, obtuse, whitish, becoming tawny.

On trunks. Victoria. Queensland. N.S.Wales.

**778. *Polystictus velutinus*.** *Fr. Hym. Eur.* 568. *Sacc. Syll. vi.*, 5763.

Pileus between corky and coriaceous, plane on both sides, velvety, soft, slightly zoned, white, at length yellowish; margin extenuated, acute (5 c.m. broad); pores rounded, minute, thin, white.

On trunks. Victoria. Queensland.

**779. *Polystictus gausapatus*.** *Kalch. Grev. x.*, 102. *Sacc. Syll. vi.*, 5770.

Pileus between fleshy and coriaceous, rigid, dimidiate, sessile, shell-shaped, zoned, strigose and very rough to the touch, fawn colour, then brownish (7-12 c.m. broad, 2 c.m. thick at the base); pores of medium size; rounded, obtuse, white, then grey or rufescent; substance white.

On trunks. N.S.Wales.

**780. *Polystictus glirinus*.** *Kalch. Sacc. Syll. vi.*, 5773. =  
*Polystictus murinus. Kalch. Grev. iv.*, 72.

Pileus semi-orbicular or somewhat reniform, shell-shaped, protracted at the vertex into a spurious stem, delicately tomentose-villose, mouse-coloured or rather olivaceous, zoned; zones becom-

ing bald, white (8 c.m. broad) ; pores minute, very short, in places unequal, white.

On trunks. Queensland.

**781. *Polystictus limbatus*.** *Fr. Epic.* 479. *Sacc. Syll.* vi., 5777.

Pileus coriaceous, thin, rather velvety, concentrically sulcate-zoned, becoming ferruginous, of one colour ; margin sterile beneath (5 c.m. broad), internally white ; pores minute, equal, obtuse, paler than the pileus.

On trunks. Victoria.

**782. *Polystictus vellereus*.** *Berk. Journ. Bot.* 1842, 455. *Sacc. Syll.* vi., 5779.

Pileus dimidiate, coriaceous, soft, thin, white, densely silky-villose, zones darker, very narrow (5 c.m. broad,  $2\frac{1}{2}$  c.m. long) ; margin very acute, lobed ; pores of medium size, ochraceous, rather hexagonal ; dissepiments thin, torn, and toothed.

On trunks. Queensland. New Ireland.

**783. *Polystictus pinsitus*.** *Fr. Epic.* 479. *Sacc. Syll.* vi., 5781.

Between coriaceous and membranaceous, tough ; pileus hairy, concentrically sulcate, of one colour, cinereous (4-8 c.m. broad) ; pores short, rather large, angular, acute, unequal, white.

On dead wood. Queensland.

**784. *Polystictus hypothejus*.** *Kalch. Grev.* x., 102, t. 145, f. 26. *Sacc. Syll.* vi., 5784.

Pileus thin, coriaceous, shell-shaped (scarcely  $2\frac{1}{2}$  c.m. broad), narrowed at the base and adnate, silky-villose, white, zoned, with the zones of the same colour ; pores rather large, short, angular, acute, becoming bright yellowish.

On trunks. N.S. Wales.

**785. *Polystictus brunneoalbus*.** *Fries. Berk. Hook. Journ.* 1856, 176 (*sub-brunneoleucus*.) *Sacc. Syll.* vi., 5785.

Imbricated, effused behind ; pileus dimidiate, rather zoned, rugose, thin, coriaceous, somewhat flaccid, ferruginous, then blackish-brown, velvety, here and there becoming smooth ( $3\frac{1}{2}$ -4 c.m. broad, 1-2 c.m. long) ; hymenium pallid ; pores small, angular, almost entire or toothed ; dissepiments thin.

On trunks. Tasmania.

\* \* ECTYPI. *Pileus becoming smooth.*

**786. *Polystictus trizonatus*.** *Cooke Grev.* xii., 17. *Sacc. Syll.* vi., 5787.

Pileus coriaceous, thin, rigid, ochraceous, flattened, convex behind, silky, variegated with three elevated darker zones (4-5 c.m. broad), margin entire, acute ; pores small, rounded, decurrent behind, white ( $\frac{1}{4}$  m.m. diam.).

On trunks. Victoria.

## \*\* ABIETINI.

- 787. *Polystictus stereoides*.** *Fr. Hym. Eur.* 569. *Sacc. Syll.* vi., 5808.

Pileus coriaceous, thin, rigid, effused and reflexed, pubescent, then smooth, grey-brown, zones of the same colour (1-1½ c.m. long, 1-2½ c.m. broad), pores short, rather large, obtuse, deformed, white.

On trunks. Victoria. Queensland. N.S.Wales.

## b. SCORTEI.

\* *Substance pallid.*

- 788. *Polystictus scortens*.** *Fries Nova Symb. p.* 89. *Sacc. Syll.* vi., 5811.

Pileus coriaceous, flattened on both sides, concentrically sulcate and zoned, villose scrupose, verdigris-grey (3 c.m. and more broad), substance very thin, wood-colour or tan colour; pores of medium size, rather rounded, angular, obtuse, pale cinnamon yellow.

On trunks. N.S.Wales.

- 789. *Polystictus peradenia*.** *Berk. & Br. Linn. Journ.* xiv., 51. *Sacc. Syll.* vi., 5820. = *P. chrysoleucus*, *Kalch. Grev.* iv., 72.

Pileus dimidiate, decurrent at the base, laterally confluent, somewhat zoned, silky, membranaceous, pubescent, olive, longitudinally rugose (2½ c.m. broad, 18 m.m. long), margin paler; hymenium pale olive, or a little brick red, pores of medium size, shallow, dissepiments rigid, acute margin sterile.

On dead wood. Queensland.

- 790. *Polystictus vernicifluus*.** *Berk. Fl. Tasm.* ii., 254. *Sacc. Syll.* vi., 5827.

Pileus dimidiate, rather flabelliform, thin, varnished and polished, rufous (25 m.m. broad, 18 m.m. long), hymenium pallid; pores minute, irregular (170 μ diam.).

On rotten wood. Queensland. Tasmania.

- 791. *Polystictus Persoonii*.** *Fries Sacc. Syll.* vi., 5832 = *Dædalea sanguinea*, *Klotsch. Linn.* viii., 481.

Pileus coriaceous, flattened, rugulose, obsoletely zoned, smooth, dark blood-red, growing pale (margin often whitish), (7 c.m. broad, 5 c.m. long, often confluent), hymenium at first porose, then (especially behind) narrowly labyrinthiform; pallid cinnamon, or wood colour.

On dead wood. Victoria. Queensland. New Guinea.

\*\* *Substance flesh coloured.*

- 792. *Polystictus cupreo-roseus*.** *Berk. Hook. Journ.* 1856, 233. *Sacc. Syll.* vi., 5836.

Pileus thin, rather convex, coriaceous, copper coloured, silky, shining, radiately rugose, and lineate, thickly zoned, margin acute.

(23 c.m. broad, 11 c.m. long) ; hymenium vinous, pores of medium size, flexuous.

On dead wood. Australia.

**793. *Polystictus vinosus*.** *Berk. Ann. Nat. Hist., Vol. ix., 195. Sacc. Syll. vi., 5838.*

Pileus reniform, thin, zoned, delicately velvety, becoming smooth, dark vinous (5 c.m. broad, 2½ c.m. long) ; hymenium of the same colour, pores small, hexagonal.

On rotten wood. Queensland.

#### c. LUTESCENTES.

\* *Substance tawny ferruginous.*

**794. *Polystictus occidentalis*.** *Fr. Epic. 491. (Trametes) Sacc. Syll. vi., 5843.*

Pileus between corky and coriaceous, plane, effused and reflexed, tomentose, concentrically sulcate, of one colour, gilvous, growing pale, margin acute (8 c.m. broad or more) ; pores small, rather rounded, quite obtuse, gilvous yellow.

On trunks. Victoria. Queensland. N.S.Wales. S. Australia.

**795. *Polystictus rigens*.** *Sacc. Syll. 5844.=Trametes rigida, B. & M. Ann. Sci. Nat. 1849.*

Pilei effused, shortly reflexed, often confluent, coriaceous, rigid, more or less concentrically sulcate, rugose, velvety, pale tawny wood colour (4-8 c.m. or confluent), substance of the same colour ; pores small, roundish, or shortly flexuous, pallid wood colour, edge obtuse.

On trunks. Queensland. N.S.Wales.

**796. *Polystictus byrsinus*.** *Mont. Cuba 391, t. 15, f. 3. Sacc. Syll. 5846.*

Broad, of one colour. Pileus coriaceous, soft, thin, flaccid, elastic, at first wholly resupinate, then effused behind, reflexed, semiorbicular, plane, tomentose, concentrically sulcate ; margin spreading, acute, substance floccose, pores round, equal, very short, obtuse, ferruginous tawny.

On bark. Queensland.

Probably only a variety of *P. occidentalis*.

**797. *Polystictus tephroleucus*.** *Berk. Hook. Journ. 1852, 185. Sacc. Syll. vi., 5847.*

Pileus dimidiate, rigid, coriaceous, white, zoned, strigosely velvety (7-8 c.m. broad, 5 c.m. long), substance white ; pores of medium size, cinereous, dissepiments rigid, sometimes elongated, edge acute.

On dead wood. Victoria.

\*\* *Substance yellow or golden.*

**798. *Polystictus citreus*.** *Berk. Linn. Journ. xiii., 162. Sacc. Syll. vi., 5866.*

Pileus narrowly spathulate, or split and flabellate, lemon yellow, a little zoned, lineate (18-20 m.m. long, 6-7 m.m. broad), margin



inflexed, thin, rather acute, tomentose; pores somewhat flesh-colour, sinuate or angular, small, dissepiments thin.

On rotten wood. Australia.

\* \* Substance yellow.

**799. *Polystictus aratus*.** *Berk. Linn. Journ.* xvi., 53. *Sacc. Syll.* vi., 5869.=*Trametes acupunctatus*. *Berk. Linn. Journ.*

xiii., 164.

Yellowish olive; pileus dimidiate, somewhat imbricated, flexile, concentrically sulcate, shining, smooth ( $8\frac{1}{2}$ -10 c.m. broad, 7-8 c.m. long), margin thin, sterile beneath, substance of the same colour; pores small, rather rigid, darker, somewhat hexagonal.

On trunks. Queensland. Lord Howe's Island. New Guinea.

**800. *Polystictus luteo-olivaceus*.** *B. & Br. Linn. Trans.* 1879, 402, pl. 45, fig. 8. *Sacc. Syll.* vi., 5870.=*P. placodes*.

*Kalch. Grev.* iv., 73.

Pileus woody, rigid, sessile, thin, pubescent to the touch, deeply and concentrically zoned, rough with roundish warts ( $12\frac{1}{2}$  c.m. broad,  $7\frac{1}{2}$  c.m. long); pores minute, round, equal, ochraceous-brown; substance olive yellow.

On trunks. Queensland.

#### d. CAPERATI.

\* Substance tawny.

**801. *Polystictus Hasskarlii*.** *Lev. Ann. Sci. Nat.* 1144, 190. *Sacc. Syll.* vi., 3875.

Pileus corky, imbricate, zoned, unequal, velvety, bay brown (3-10 c.m. broad), margin obtuse, sterile; pores strатose, small, round, ferruginous; substance of the same colour.

On trunks. Queensland.

**802. *Polystictus tabacinus*.** *Mont. Syll.* 167. *Sacc. Syll.* vi., 5876.

Imbricate; pilei ferruginous, bay, coriaceous, thin, rigid, effused and reflexed, shell-shape, tomentose, concentrically zoned (3-6 c.m. broad), margin acute, paler; pores medium size, torn or toothed, at length of the same colour.

On trunks. N.S.Wales.

**803. *Polystictus cichoraceus*.** *Berk. Hook. Journ.* 1862. *Sacc. Syll.* vi., 5878.

Imbricate; pilei thin, coriaceous, rigid, multiplex, orbicular or kidney-shaped, lobed, plicate, rugose, zoned, brown, silky (tufts 6 c.m. broad, pilei 1-3 c.m. or more), hymenium ferruginous, at length brown; pores medium size, dissepiments toothed.

On trunks. Victoria. Queensland. (Fig. 57).

**804. *Polystictus xerampelinus*.** *Kalch. Grev.* iv., 72. *Sacc. Syll.* vi., 5883.

Pileus between corky and coriaceous, densely imbricate, concate, villous, becoming smooth, with many concentric furrowed

zones, purplish-umber, substance rusty-fulvous; pores small, rounded, equal, of the same colour as the pileus.

On trunks. Queensland.

**805. *Polystictus caperatus*.** *Berk. Ann. Nat. Hist.* 1839, 391. *Sacc. Syll.* vi., 5887.

Solid, between woody and coriaceous, thin, effused at the base; pileus zoned, variegated with brown, at first velvety, then naked, often shining (10-13½ c.m. broad, 10 c.m. long), hymenium pallid fawn-colour; pores minute, roundish, dissepiments thin.

On dead wood. Queensland. N.S.Wales.

e. **MEMBRANACEI.** *Pileus papery, very thin, substance wholly longitudinally fibrous, not floccose; pores very shallow.*

**806. *Polystictus breviporus*.** *Cooke Grev.* xii., 17. *Sacc. Syll.* vi., 5909.

Ferruginous; pileus membranaceous, rather rigid, radiately rugose, scurpouse, shell-shaped or imbricate, margin crispate; pores very short, minute, rounded, of the same colour, ½ m.m. diam., dissepiments entire.

On trunks. Queensland.

**807. *Polystictus Braunii*.** *Rabh. Fun. Eur.* 2005. *Sacc. Syll.* vi., 5917.

Pilei sessile, either dimidiate and rather cæspitously imbricated, or incurved, orbicular, membranaceous, and soft when moist, hard when dry, chestnut-brown, bald, rugulose, concentrically zoned, margin acute, with yellow edge; pores very minute, long, round, or unequal, bright egg-yellow.

On trunks. Victoria.

f. **SUBRESUPINATI.** *Pileus somewhat resupinate, or with the margin reflexed.*

**808. *Polystictus bireflexus*.** *B. & Br. Grev.* x., 101. *Sacc. Syll.* vi., 5921.

Pileus effused, adnate; margin reflexed, incurved, pallid, obsoletely linearly zoned, pubescent, then smooth (2-3 in. long); pores regular, rounded, whitish, tubes elongated, flesh thin.

On trunks. Queensland.

**809. *Polystictus eriophorus*.** *B. & Br. Linn. Trans.* ii., 60, t. 11, f. 5-6. *Sacc. Syll.* vi., 5922.

White, adnate, wholly cottony; margin slightly reflexed, often orbicular, then confluent (12-25 m.m. diam.); pores irregular, medium, edge obtuse.

On branches. Queensland. N.S.Wales.

**810. *Polystictus Broomei*.** *Rabh. Fung. Eur. Exs. No.* 2004. *Linn. Trans.* i., 1879, 402, pl. 45, f. 16. *Sacc. Syll.* vi., 5931.

Pilei very numerous, minute, at first sometimes evidently stipitate, at length always sessile, closely imbricate like scales,

membranaceous, incurved, whitish yellow, brown when dry ( $\frac{1}{2}$ -1 c.m.); pores elongated, rounded or oblong, almost of the same colour as the pileus.

On old wood. Queensland.

**811. Polystictus latus.** *Berk. Ann. Nat. Hist.* III., 325.  
*Sacc. Syll.* VI., 5933.

Resupinate, but with the margin here and there free, obscurely zoned above, dingy brown, pruinose velvety (to 20 c.m. broad), substance of the same colour, tinged with ferruginous, corky, coriaceous; hymenium wood-coloured, equal; pores rounded, regular, for the most part with the edge toothed, pallid.

On branches. Tasmania.

GENUS 26. **PORIA.** *Pers. Syn.* 542.

Resupinate, effused, porose above; pileus for the most part obliterated; substance fleshy, tow-like, leathery, or membranaceous.

a. **MOLLUSCI.** *Pileus broadly expanded, fleshy; pores for the most part minute, equal, rounded.*

\* *Pores persistently white.*

**812. Poria vulgaris.** *Fr. Hym. Eur.* 578. *Sacc. Syll.* 5935.

Broadly effused, thin, closely adnate, dry, even, white (1 m.m. thick); margin soon smooth, consisting wholly of firm, crowded, small, round, nearly equal pores.

On wood and branches. Victoria. Queensland.

**813. Poria mollusca.** *Fr. Hym. Eur.* 578. *Sacc. Syll.* 5936.

Effused, thin, soft, white, circumference byssoid, radiately fibrillose; pores crowded here and there, or in the centre, small, thin, round, unequal and torn, growing pallid.

On old wood. Victoria. (Fig. 58).

**814. Poria hyalina.** *Berk. Fl. Tasm.* II., 255. *Sacc. Syll.* 5938.

Resupinate, white, hyaline, thin; margin tomentose; pores small, elongated at the centre (160  $\mu$  diam.), dissepiments thin.

On naked wood. Tasmania.

**815. Poria subvineta.** *B. & Br. Linn. Journ.* XIV., 54.  
*Sacc. Syll.* 5942.

Rather thick, broadly effused, white, separable; margin oblique, tomentose, shining white; pores elongated, punctiform, substance white, contracting when dry.

On dead wood. Tasmania.

**816. Poria medulla-panis.** *Pers. Fr. Hym. Eur.* 579.  
*Sacc. Syll.* 5947.

Effused, determinate, rather undulate, firm, smooth, white; margin naked, submarginate, the whole substance consisting of rather long, medium-sized, entire pores.

On old wood. Queensland.

- 817. *Poria calcea.*** *B. & Br. Linn. Journ.* xiv., 58. *Sacc. Syll.* 5948.

Chalky white. Wholly resupinate, effused; margin very thin, adnate, membranaceous; pores small, angular, dissepiments thin,  $\frac{1}{6}$ - $\frac{1}{7}$  m.m. diam.).

On dead wood. Queensland.

- 818. *Poria niphodes.*** *B. & Br. Ceylon Fungi No.* 507. *Sacc. Syll.* 5949.

Wholly resupinate, snowy white; margin very narrow; pores irregular, pulverulent, chalky.

On wood. N.S.Wales.

**\*\* Pores white, at length pale ochraceous.**

- 819. *Poria tarda.*** *Berk. Hook. Journ.* 1845. *Sacc. Syll.* 5952.

White, then ochraceous, mycelium waxy, resembling *Corticium*; margin narrow, tomentose; pores slowly developed, small, entire (250  $\mu$  broad).

On dead wood. W. Australia.

- 820. *Poria callosa.*** *Fries Hym. Eur.* 577. *Sacc. Syll.* 5964.

Broadly effused, equal, tough, entire, separable like soft leather, white; margin similar (2-4 m.m. thick), not strатose; pores firm, round, equal, entire, obtuse; spores 6  $\mu$  long.

On wood. Queensland.

**\*\*\* Pores yellowish.**

- 821. *Poria parilis.*** *Fr. Pl. Preiss. p.* 136. *Sacc. Syll.* 5969.

Longitudinally effused (3 c.m. or more), closely adnate, confluent, dry, immarginate, yellow, becoming pallid; subiculum none, circumference equal; pores minute, nearly round, short, smooth.

On bark. W. Australia.

**\*\* Pores flesh coloured.**

- 822. *Poria vineta.*** *Berk. Ann. Nat. Hist.* 1852, 196. *Sacc. Syll.* 5983.

Wholly resupinate, rather thick in the centre; margin thin, somewhat free, tinged above with red (4 m.m. thick in the centre); pores small, pallid, substance wood-colour.

On rotten wood. Victoria. Queensland.

- 823. *Poria epilintea.*** *Berk. & Br. Linn. Journ.* xiv., 55. *Sacc. Syll.* 5982. = *Polyporus rufolateritius.* *Kalch. Grev.* x., 104.

Wholly resupinate, effused; margin and substance fibrous, hymenium flesh colour; pores minute ( $\frac{1}{7}$  m.m. diam.).

On trunks. N.S.Wales.

- 824. *Poria hyposclera.*** *Berk. Grev. x., 103. Sacc. Syll. 5984.*

Effused, rather thick; margin thin, almost free, above pallid ochraceous, or tinged with flesh colour; pores small, elongated, pallid, regular; dissepiments thin.

On trunks. Queensland. Victoria.

\*\*\* *Pores reddish.*

- 825. *Poria rufa.*** *Schrad. Fr. Hym. Eur. 573. Sacc. Syll. 5994.*

Effused, coriaceous, thin, adnate, even, smooth, determinate, blood-red; pores small, thin, acute.

On branches. Victoria.

\*\*\* *Pores purple or violet.*

- 826. *Poria atro-vinosa.*** *Cooke Grev. x., 131. Sacc. Syll. 5995.*

Effused, indeterminate, dark vinous purple; margin powdery, tomentose; pores very minute, round, long, entire, equal (100  $\mu$  diam.), hymenium soon splitting.

On trunks. N.S.Wales.

*Pores grey or cinereous.*

- 827. *Poria victoriæ.*** *Berk. in Grev. x., 103. Sacc. Syll. 6003.*

Smoky colour, effused, thin; pores oblique, elongated, round, minute, dissepiments very thin.

On trunks. Victoria. Queensland.

- 828. *Poria livida.*** *Cke. Grev. x., 131. Sacc. Syll. 6004.*

Effused, determinate, crustaceous, livid, sooty-brown; margin soon nearly free; pores medium, rather round, entire (30  $\mu$  diam.), dissepiments rigid.

On bark. N.S.Wales.

- b. *VAPORARI.* *Pileus broadly expanded, fleshy, pores unequal, angular, commonly rather large.*

- 829. *Poria vaporaria.*** *Fr. Hym. Eur. 579. Sacc. Syll. 6035.*

Effused, innate, mycelium creeping in the wood, floccose, white; pores large, angular, white, then pallid, crowded in a continuous, firm, persistent stratum.

On rotten wood, etc. Victoria. Queensland. W. Australia. Tasmania.

- 830. *Poria membranicaincta.*** *Berk. Grev. xv., 26. Sacc. Syll. 6057.*

Effused, thin, pallid ochraceous, seated on a paler, membranaceous stratum; margin broad, sterile; pores for the most part

oblique, of medium size, nearly equal, angular, dissepiments thin.

On dead wood. Tasmania.

**831. *Poria aprica*.** *Berk. Fl. Tasm.* II., 254. *Sacc. Syll.* 6062.

Resupinate, effused, loosely adhering, like *Xylostroma*, pallid fawn-colour; pores of medium size, scattered ( $360\ \mu$  diam.), dissepiments thin.

On dead wood. Tasmania.

**832. *Poria merulina*.** *Berk. Fl. Tasm.* II., 254. *Sacc. Syll.* 6068.

Resupinate, effused, orange, subiculum thin, membranaceous, tomentose; pores medium ( $360\ \mu$  diam.), dissepiments membranaceous.

On dead wood. Tasmania.

c. **RIGIDI.** *Pileus effused, leathery, dry, tough; pores rather large, rounded, somewhat hexagonal or angular, almost equal; dissepiments short, rigid.*

**833. *Poria corticola*.** *Fr. Hym. Eur.* 580. *Sacc. Syll.* 6093.

Very broadly effused, equal, firm, white, or becoming pallid, mycelium, interwoven, in a naked *Xylostroma*-like stratum; pores naked, superficial, sometimes obsolete, punctiform.

On rotting bark. Victoria. Queensland. S. Australia.

**834. *Poria sinuosa*.** *Fries Epicr.* 487. *Sacc. Syll.* 6095.

Broadly effused, adnate, dry, springing from an evanescent mycelium, white, then yellowish (4 m.m. thick); pores broad, flexuous, various, acute, torn. Spores  $6 \times 2-3\ \mu$ .

On wood and bark. N.S.Wales.

**835. *Poria ferruginosa*.** *Fr. Hym. Eur.* 571. *Sacc. Syll.* 6123.

Effused, thick, firm, unequal, tawny, then ferruginous bay, margin sterile (as much as  $2\frac{1}{2}$  c.m. thick); pores of medium size, very long, roundish and torn, cinnamon.

On wood. Victoria. Queensland. N.S.Wales. W. Australia.

*P. corium*, Kunze, is only a form of this.

**836. *Poria contigua*.** *Fr. Hym. Eur.* 571. *Sacc. Syll.* 6126.

Effused, thick, firm, smooth, somewhat marginate, cinnamon when young, margin at first villose (8 c.m. long,  $2\frac{1}{2}$  c.m. broad, 12 m.m. thick); pores rather large, equal, obtuse, entire.

On old wood. Victoria. Queensland. N.S.Wales.

**837. *Poria orbicularis*.** *Berk. Ann. Nat. Hist.* III., 324. *Sacc. Syll.* 6130.

Exactly orbicular, dark brown, margin sterile, membranaceous, strigosely pubescent; hymenium central, cracked when dry ( $7\frac{1}{2}$

c.m. broad, 3-4 m.m. thick in centre); pores short, 3-4 parted, sinuous, mouths dentate, dissepiments thin.

On living bark. Tasmania.

d. **RETICULATI.** *Pileus irregularly effused, for the most part incrusting, thin, membranaceous. Pores rather large, distant, cup shaped; dissepiments very short, sometimes like veins.*

**838. *Poria dictyopora.*** *Cooke Gräv. XII., 17. Sacc. Syll. 6131.*

Effused, indeterminate, thin, white incrusting; pores effused, here and there central, equal, rather angular; dissepiments thin, very short, like reticulated veins, persistently white, sterile parts villose.

On burnt wood. Victoria. Queensland.

**839. *Poria fatiscens.*** *Berk. & Rav. Gräv. I., 65. Sacc. Syll. 6138.*

Wholly resupinate, white, very thin, powdery; pores produced in series, at first punctiform, then angular ( $\frac{1}{4}$  m.m. broad).

On wood. Queensland.

**840. *Poria Archeri.*** *Berk. Fl. Tasm. II., 255. Sacc. Syll. 6153.*

Resupinate, effused, peach colour, leathery-membranaceous; margin tomentose; pores minute, irregular ( $250 \mu$  diam.); edge acute.

On rotten wood. Tasmania.

#### GENUS 27. **TRAMETES.** *Fries.*

Pores rounded, obtuse, entire, at times very unequal, not forming a homogeneous stratum, immersed beneath in the flesh of the pileus, hence the trama continuous with the substance of the pileus and similar.

**841. *Trametes phellina.*** *Berk. Linn. Journ. VIII., 164. Sacc. Syll. 6170.*

Pileus corky, adnate by an orbicular disc, becoming whitish, rugose, without zones (20 c.m. broad, 5 c.m. long); margin obtuse, hymenium pallid, pores rounded ( $800 \mu$  diam.), dissepiments obtuse.

On rotten wood. N.S. Wales.

**842. *Trametes Muelleri.*** *Berk. Linn. Journ. x., 320. Sacc. Syll. 6181.*

Pileus dimidiate, corky, delicately tomentose, white, rugose (13 c.m. broad, 8 c.m. long), lobed about the margin, concentrically sulcate; pores ( $\frac{1}{2}$  m.m. diam.) with the dissepiments obtuse.

On dead wood. Victoria. Queensland. N.S. Wales.

**843. *Trametes picta.*** *Berk. & Br. Linn. Trans. II., 61 = T. Muelleri, var. Berk.*

Pileus dimidiate, corky, hard, smooth, pallid, with darker concentric bands (4-5 c.m. broad,  $\frac{1}{2}$ -1 c.m. thick); substance white;

hymenium plane, nearly white; pores of medium size, round, equal, with obtuse dissepiments.

On wood. Queensland.

**844. *Trametes versiformis*.** *Berk. Linn. Journ.* xiv., 56.  
*Sacc. Syll.* 6183.

White, resupinate, then reflexed and lobed (thin, or 2-4 m.m. thick); pileus radiately rugose, opaque; pores at length labyrinthiform ( $\frac{1}{2}$  m.m. diam.).

On dead wood. Queensland.

**845. *Trametes Sprucei*.** *Berk. Hook. Journ.* 1856, 336.  
*Sacc. Syll.* 6185.

Pileus rather thick, gibbous, obtuse, becoming white ( $3\frac{1}{2}$ -5 c.m. or more broad, 12-13 m.m. long); substance hard, white, pores rounded, rather flexuous, dissepiments obtuse (300  $\mu$  diam.).

On dead wood. Victoria. Queensland. N.S.Wales.

**846. *Trametes heteromalla*.** *Cooke Grev.* x., 132. *Sacc. Syll.* 6188.

Pileus corky, rather soft, villose, concentrically sulcate, whitish, then somewhat cinereous (5-7 c.m. broad, 1 c.m. thick); substance white, pores rounded ( $\frac{1}{3}$  m.m. diam.), whitish, dissepiments thick, obtuse.

On trunks. N.S.Wales. (Fig. 59).

**847. *Trametes ochroleucus*.** *Berk. Hook. Journ.* 1845, 53.=  
*Polyporus ochroleucus. Sacc. Syll.* 5236.

Pileus hoof-shaped, corky, with few zones, ochrey white, at first delicately tomentose, soon quite smooth and shining ( $3\frac{1}{2}$ -4 c.m. broad); margin obtuse, sterile, substance white, hymenium pale ochraceous; pores rather small, sometimes stopped up; dissepiments entire, obtuse.

On bark. Victoria. Queensland. N.S.Wales. W. Australia. Tasmania.

**848. *Trametes deveixa*.** *Berk. Linn. Journ.* xiii., 165.  
*Sacc. Syll.* 6197.

Woody, somewhat hoof shaped, decurrent behind; pileus velvety, rather tawny ( $3\frac{1}{2}$ -4 c.m. broad,  $2\frac{1}{2}$  c.m. long), hymenium pallid; pores of medium size (800  $\mu$  diam.); edge obtuse.

On trunks. Queensland. N.S.Wales.

**849. *Trametes lactinea*.** *Berk. Ann. Nat. Hist.* x., 371.  
*Sacc. Syll.* 6204.

Pileus sessile, irregular, rather thick, hard, rigid, without zones, corky, milk white, pruinose velvety, unequal, warty (17 c.m. broad, 8-9 c.m. long), margin lobed; hymenium pallid, pores of medium size, rounded, dissepiments thick, obtuse.

On dead wood. Queensland. N.S.Wales. S. Australia.



- 850. *Trametes lævis.*** *Berk. Hook. Journ.* 1847, 507. *Sacc. Syll.* 6205.

Quite even; pileus thick, hoof-shaped, pale wood-colour, delicately pubescent (8 c.m. broad,  $4\frac{1}{2}$  c.m. long, 4 c.m. thick), substance corky, rather zoned; pores long, of medium size ( $\frac{5}{8}$  m.m. diam.), equal, pallid, round, dissepiments rather thick.

On roots. Queensland. N.S. Wales.

- 851. *Trametes Pini.*** *Fr. Hym. Eur.* 582. *Sacc. Syll.* 6213.

Pileus between corky and woody, very hard, pulvinate, concentrically sulcate, cracked and scrupose, rough, ferruginous brown, turning blackish (5 c.m. and more), substance ferruginous tawny; pores large, rounded or oblong, yellowish brick-red.

On trunks. W. Australia.

- 852. *Trametes fibrosa.*** *Fries Epic.* 490. *Sacc. Syll.* 6220.

Pileus corky, thin, rather undulate, zoned, dark brown, hispid with thickly-grown branched fibres (4-6 c.m. broad), margin fringed; pores minute, angular, brown.

On trunks. S. Australia.

- 853. *Trametes hispidula.*** *B. & C. Cuban Fungi* 304. *Sacc. Syll.* 6235.

Small, hoof-shaped, ferruginous-umber (18 m.m. wide, 12 m.m. long), pileus hispid behind; margin rather tomentose; pores of medium size, the edge paler ( $\frac{5}{7}$  m.m.), substance of the same colour.

On dead wood. Australia.

- 854. *Trametes epitaphra.*** *Berk. Linn. Journ.* XIII., 165. *Sacc. Syll.* 6240.

Pileus hoof-like, decurrent behind (1-1 $\frac{1}{2}$  c.m. broad, 6-7 m.m. thick), zoned, brown, rather hispid; margin white; pores pallid, medium size, edge obtuse.

On trunks. S. Australia.

- 855. *Trametes pyrrhocreas.*** *Berk. Linn. Journ.* XIII., 164. *Sacc. Syll.* 6241.

Pileus rather thick, zoned, behind umber brown, at length velvety, in front shortly strigose, and lineate (5-7 c.m. broad, 5 c.m. long), substance compact, but soft, tawny; pores rounded, dissepiments thick (400  $\mu$  diam.).

On trunks. Queensland. N.S. Wales.

- 856. *Trametes ochroflava.*** *Cooke Grev.* ix., 12. *Sacc. Syll.* 6247.

Wholly bright ochraceous yellow, often imbricate; pileus corky, compact, convex or flattened, tuberculose (7-25 c.m. broad, 5-12 c.m. long), margin often concentrically sulcate, internally of the same colour, concentrically zoned; pores roundish, minute, equal, ochraceous ( $\frac{1}{5}$  m.m. diam.). Tubes 1 c.m., and more, long.

On trunks. Queensland.

- 857. *Trametes scrobiculata*.** *Berk. Grev. vi., 70. Sacc. Syll. 6249.*

Ochraceous; pileus dimidiate, sparingly sulcate, scrobiculate punctate (5 c.m. broad, 18 m.m. long), substance corky, of the same colour; pores punctiform ( $\frac{1}{4}$  m.m. diam.).

On trunks. Victoria.

- 858. *Trametes mollis*.** *Fr. Hym. Eur. 585. Sacc. Syll. 6264.*

Resupinate, determinate, somewhat membranaceous, pale wood-colour, at length brownish ( $2\frac{1}{2}$ -5 c.m. broad), margin at length revolute, pubescent, umber; pores broad, unequal and torn.

On branches. N.S. Wales.

- 859. *Trametes Curreyi*.** *Cooke Trans. Bot. Soc. Eden. 157.*  
= *Tram. umbrina. Currey Ind. Fungi 124. Sacc. Syll. 6273.*

Pileus resupinate, effused, reflexed, lobed, subtomentose, between membranaceous and coriaceous, ferruginous umber (6-7 c.m. long,  $2\frac{1}{2}$  c.m. broad), slightly zoned; pores broad, torn, and toothed.

On trunks. Queensland. N.S. Wales.

- 860. *Trametes unguata*.** *Berk. Linn. Journ. XIII., 165.*  
= *Polyporus unguatus. Sacc. Syll. 5222.*

Pileus hard, whitish, shortly hoof-shaped, decurrent behind, delicately tomentose ( $3\frac{1}{2}$ -4 c.m. broad,  $2\frac{1}{2}$  c.m. long), margin obtuse, rugose, hymenium concave; pores small, edge of the same colour ( $300\ \mu$  broad).

On trunks. S. Australia.

- 861. *Trametes gausapata*.** *Berk. & Rav. in Herb. Grev. XIX. 102.* = *Irpex gausapatus. B. & C. No. 2922.*

Pileus effused behind, and reflexed, sometimes resupinate and confluent, velvety, zoned, bright umber, coriaceous (2 c.m. broad), substance brown; hymenium pallid umber; pores at length angular, rather acute ( $\frac{1}{2}$  m.m. diam.).

On trunks. Queensland.

#### SUBRESUPINATÆ.

- 862. *Trametes serpens*.** *Fries Hym. Eur. 586. Sacc. Syll. 6267.*

Dry, closely adnate, at first erumpent, tuberculiform, orbicular, then confluent, white, margin determinate, pubescent; pores rounded or angular, unequal, obtuse ( $1\frac{1}{4}$  m.m. broad); spores ovoid, hyaline,  $14 \times 6\ \mu$ .

On bark. Queensland.

#### GENUS 28. **SCLERODEPSIS.** *Cooke.*

Pileus flattened, usually scutate at the base, hard, woody, thin, margin acute, substance of the pileus thin, continuous with the hymenium, pores large, rounded or angular, sometimes confluent and elongated, edge acute, sometimes dentate.

**863. *Sclerodepsis colliculosa*.** *Berk. Cooke.* = *Trametes colliculosa*. *Berk. Hook. Journ.* 1847, 507. *Sacc. Syll.* 6237.

Pileus sessile, semi-orbicular, thin, hard, leathery, plicately rugose, somewhat silky, zoned, ochraceous (6-15 c.m. broad, 5-8 c.m. long), substance tawny; pores large ( $1\frac{1}{4}$  m.m. diam.), dentate, pallid wood colour.

On dead wood. Queensland. N.S.Wales.

GENUS 29. **DÆDALEA.** *Fr.*

Pores firm, sinuous and labyrinthiform when mature, the rest as in *Trametes*.

**864. *Dædalea glabrescens*.** *Berk. Linn. Journ.* XVI., 39. *Sacc. Syll.* 6359.

Pulvinate, expanded, thick, at first scabrous and tomentose, then smooth, zoned, pallid (15 c.m. broad, 8 c.m. long), margin acute; gills thick, straight, for the most part flexuous behind.

On trunks. N.S.Wales. (Fig. 60.)

**865. *Dædalea intermedia*.** *Berk. Linn. Journ.* XVIII., 385. *Sacc. Syll.* 6361.

Dimidiate, pallid, zoned in front, radiately rugose from the impression of the pores (6-7 c.m. broad,  $3\frac{1}{2}$ -4 c.m. long), pores large, here and there elongated ( $1\frac{1}{2}$  m.m. broad).

On trunks.

**866. *Dædalea ambigua*.** *Berk. Hook. Journ.* 1845, 305. = *Trametes ambigua*. *Fr. Nova Sym.* 80. *Sacc. Syll.* 6184.

Pileus corky, thick, convex, without zones, becoming white, smooth (15 c.m. broad, 7 c.m. long, 3-4 c.m. thick), hymenium rather tan-coloured, pores small, sinuous, with the edge obtuse.

On dead trunks. N.S.Wales.

**867. *Dædalea subcongener*.** *Berk. Grev.* XIX., 93.

Corky. Pileus dimidiate, flattened, velvety, pallid wood coloured, or rather tawny (6-12 c.m. diam.), concentrically sulcate, pallid within, hymenium of the same colour, pores deep ( $\frac{1}{2}$ -1 c.m.), much crowded, flexuous, very narrow, dissepiments thin.

On trunks.

**868. *Dædalea Mulleri*.** *Berk. (not Trametes Mulleri, B.) Grev.* XIX., 93.

Pileus corky, rather thick, convex, narrowed behind, without zone, rugose or tuberculate, smooth, whitish (7-8 c.m. broad), margin rather acute, hymenium pale tan-colour, gills rather crowded, broad, thin, acute, forked and anastomosing, here and there porose, then parallelly sinulose.

On trunks. Victoria.

**869. *Dædalea incompta*.** *Berk. Linn. Trans.* II., 61, t. 12, f. 1, 2. *Sacc. Syll.* 6363.

Imbricate, pileus pallid, variegated with dingy brown spots, split, hard, rugose, zoned (5 c.m. broad, 4 c.m. long), margin

obtuse, hymenium minutely sinuous, wood coloured, pores (1-2 m.m.) descending behind.

On trunks. Queensland.

**870. *Dædalea scalaris*.** *B. & Br. Linn. Trans.* II., 61, t. 11, f. 7-9. *Sacc. Syll.* 6364.

White, pilei imbricate, thick, bleached above (7-8 c.m. long, 2-2½ c.m. thick), pores roundish, then variously sinuous, edge obtuse, substance soft, corky, white.

On trunks. Queensland.

**871. *Dædalea tenuis*.** *Berk. Hook. Journ.* 1842, 151. *Sacc. Syll.* 6367.

Corky, umber wood-colour; pileus dimidiate, thin, flattened, zoned, rugose, unequal, becoming almost smooth (10 c.m. broad, 6 c.m. long), margin quite acute, pores elongated, straight, radiating, interstices dentiform or lamellate, edge acute.

On stumps. Queensland. S. Australia.

**872. *Dædalea Schomburgkii*.** *Berk. Austr. Fungi* 27. *Sacc. Syll.* 6368.

Corky, pallid ochraceous; pileus thin, flattened, dimidiate, zoned, rather rugose, very shortly velvety, then nearly smooth (7-10 c.m. broad, 6 c.m. long), margin acute; pores elongated, radiating, confluent, lamellate, dissepiments thick, rugulose, edge rather acute.

On trunks. S. Australia.

**873. *Dædalea Sprucei*.** *Berk. Hook. Journ.* 1856, 236. *Sacc. Syll.* 6370.

Pileus corky, subconvex, rather rough (12 c.m. and more broad), margin zoned, dingy umber, thin, hymenium convex; pores flexuous, elongated, umber brown, dissepiments broken into lamellæ.

On dead trunks. Queensland.

**874. *Dædalea aulacophylla*.** *Berk. Linn. Journ.* XIII., 165. *Sacc. Syll.* 6374.

Pileus reniform, sometimes furnished with a short peduncle, whitish, tomentose, rather scabrous, slightly zoned (20-23 c.m. broad, 8-10 c.m. long); gills umber, elongated behind, transversely sulcate.

On trunks. S. Australia.

**875. *Dædalea unicolor*.** *Bull. Fr. Hym. Eur.* 588. *Sacc. Syll.* 6376.

Pileus coriaceous, villous, strigose, cinereous, zones of same colour (3-4 c.m., connate or imbricate); pores labyrinthiform, flexuous, intricate, acute, at length torn and dentate.

On trunks. Queensland.

**876. *Dædalea Hobsoni*.** *Berk. Linn. Journ.* XIII., 165. *Sacc. Syll.* 6382.

With the habit of *D. unicolor*, but the whole fungus ochrey white, flaccid, submembranaceous (8-12 c.m. wide, 6 c.m. long);

substance thin, white; hymenium porose behind, becoming lamelliform; teeth placed transversely.

On trunks. S. Australia.

**877. *Dædalea latissima*.** *Fr. Syst. Myc.* i., 340. *Sacc. Syll.* 6404.

Effused, corky or woody, thick, undulate, pallid wood colour, zoned within (10-70 c.m. broad); pores narrow, distant, rounded, or very long, flexuous and subrotund.

On old trunks. Queensland.

**878. *Dædalea sinulosa*.** *Klotsch. Linn.* VIII., 482. *Sacc. Syll.* 6406.

Effused, corky or leathery, thin, strатose, reviving, pallid wood-colour (often 10 c.m. long); pores various, minute, sinuous, obtuse, smooth.

On trunks. Queensland.

**879. *Dædalea tasmanica*.** *Sacc. Syll.* 6408. = *Trametes dædaleoides*. *Berk. Ann. Nat. Hist.* III., 325.

Resupinate, suborbicular ( $7\frac{1}{2}$ -10 c.m. broad), substance thin, brown, densely floccose; hymenium wood-coloured, pores broad, deep, rounded, angular, pallid within, walls thin, at length broken ( $\frac{4}{8}$  m.m. diam.).

On rotten wood. Tasmania.

**880. *Dædalea Bowmanni*.** *Berk. Linn. Journ.* XIII., 165. *Sacc. Syll.* 6409.

Pileus resupinate, then narrowly reflexed, tomentose, pallid (5-8 c.m. broad); hymenium of the same colour, porose; pores sinuous, edge obtuse, tomentose, margin irregularly toothed and lobed.

On trunks. Queensland.

#### GENUS 30. **CERIOMYCES.** *Corda.*

Fungi subglobose or pulvinate, nearly sessile, fleshy, or corky, cellular within and sporiferous, externally unequal. Spores ovoid.

**881. *Ceriumyces incomptus*.** *Sacc. Bull. Soc. Myc. Fr.* v., 1889, p. 117.

Subglobose, unequal (8-9 c.m. broad), between corky and woody, sessile, externally pallid, nearly even, internally sooty brown; cells vertically elongated, very close, dissepiments pallid; spores ellipsoid, rather apiculate at the base,  $7-9 \times 6 \mu$ ; ochrey-brown.

On wood. Kangaroo Island.

#### GENUS 31. **HEXAGONIA.** *Fries.*

Hymenophore descending unchanged into the trama; pores from the first hexagonal, regular, woody and hard, with firm dissepiments, never torn.

- 882. *Hexagonia Wightii*.** *Klotsch. Fr. Nova Symb.* 84. *Sacc. Syll.* 6274.

Pileus suberous, coriaceous (8-10 c.m.), plane, fibrous, setose, without zones, brown, pores oblong, hexagonal, very broad, ferruginous, setose within.

On trunks. Victoria. Queensland. New Guinea. Bloomfield River.

- 883. *Hexagonia crinigera*.** *Fr. Epicr.* 496. *Sacc. Syll.* 6278.

Pileus suberous-coriaceous, plane ( $2\frac{1}{2}$ -5 c.m.), setose with rigid hairs, without zones, brown, turning blackish; pores subrotund, then hexagonal (2-4 m.m.), pallid, cinnamon, smooth within, glaucous, rather pruinose.

On trunks. Queensland.

- 884. *Hexagonia durissima*.** *B. & Br. Ceyl. Fun.* 524. *Sacc. Syll.* 6290.

Pileus hoof-shaped, rugose, zoned with red and brown (5 c.m. long); substance rather fleshy; pores pallid, elongated, edge obtuse (2 m.m. broad, 4 c.m. deep).

On wood. Victoria.

- 885. *Hexagonia Muelleri*.** *Berk. Linn. Journ.* XIII., 166. *Sacc. Syll.* 6300.

Thin, rigid, fixed behind by an orbicular disc; pileus multizonate, radiately rugose, lobed (10 c.m. broad), ochraceous, becoming brownish; margin acute, hymenium tawny; pores of medium size ( $\frac{1}{2}$  m.m. diam.).

On *Eucalyptus* trunks. Queensland. N.S.Wales.

- 886. *Hexagonia sericea*.** *Fr. Epicr.* 497. *Sacc. Syll.* 6306.

Pileus between coriaceous and membranaceous, entire (5-7 c.m. broad), somewhat campanulate, silky-villose, pallid, adnate at the vertex, sessile; pores thin, irregularly hexagonal.

On trunks. Queensland.

- 887. *Hexagonia Gunnii*.** *Berk. Hook. Journ.* IV., 57. *Sacc. Syll.* 6310.

Pileus sessile, rather hoof-like, imbricate, even or scabrous, wood coloured (6-8 c.m. broad), slightly zoned about the margin; substance brown, corky, soft; pores 5-6 sided, broad, same colour as the pileus (3-6 m.m. broad).

On bark, etc. Victoria. W. Australia. Tasmania.

- 888. *Hexagonia rigida*.** *Berk. Linn. Journ.* XVI., 54. *Sacc. Syll.* 6315.

Dimidiate, decurrent behind, rigid; pileus umber, concentrically zoned, and sulcate, radiately rugulose, at length smooth (7-8 c.m. diam.); margin and elevated zones delicately tomentose; hymenium pallid; pores large ( $1\frac{1}{2}$ -2 m.m. diam.).

On trunks. N.S.Wales. Lord Howe's Island.

- 389. *Hexagonia umbrinella*.** *Fr. Fungi Natal* 17. *Sacc. Syll.* 6319.

Pileus between corky and leathery, kidney-shaped, densely concentrically smooth, umber, opaque; pores broad, rather rounded, angular, obtuse, dark brown.

On trunks. Queensland.

- 390. *Hexagonia discolor*.** *Fr. Sacc. Syll.* 6320=*Favolus discolor*. *Fries Pl. Preiss.* 136.

Pileus effused, reflexed, unpolished, pallid umber; margin short, swollen; pores rounded, cup-shaped, smooth, shining white, on a dark-brown foundation.

On bark. W. Australia.

- 391. *Hexagonia tenuis*.** *Hook. in Kunth. Syn.* 10. *Sacc. Syll.* 6324.

Pileus leathery, kidney-shaped, rigid, smooth, turning hoary, densely concentrically sulcate, of the same colour; margin thin, brown (5-8 c.m. diam.); pores of medium size ( $1\frac{1}{2}$  m.m.), hexagonal, hoary-brown.

On trunks. Queensland. S. Australia. N.E. Australia. Cape York.

var. ***subtenuis***. *Berk. in Herb.*

This, which stands in *Herb. Berk.* as *Hexagonia subtenuis*, is hardly distinguishable from *H. tenuis*, except that the alveoli are doubly as broad ( $1\frac{1}{2}$ -2 m.m.).

On branches. Queensland. N. Australia. S. Australia. (Fig. 61.)

- 392. *Hexagonia polygramma*.** *Mont. Cuba t. xiv., f. 3.* *Sacc. Syll.* 6325.

Pileus leathery, thin, kidney-shaped, quite smooth, shining, pale wood-colour, then brownish (2-6 c.m. broad), zoned with darker, crowded, concentric furrows; pores medium, hexagonal, turning brown.

On trunks. Queensland. S. Australia. Goode Island. New Guinea.

- 393. *Hexagonia similis*.** *Berk. Hook. Journ.* 1846, 4. *Sacc. Syll.* 6328.

Pileus rather lateral, somewhat corky or leathery, thin, flattened, pale wood-colour, then tawny (11-12 × 7-8 c.m.); zones frequent behind, fewer in front, rugose here and there, marked with prominent lines, smooth, silky, shining; pores small, pallid, at first pruinose within; margin of the hymenium sterile.

On rotten wood. Queensland. N.S. Wales. Arnheim's Land.

- 394. *Hexagonia decipiens*.** *Berk. Linn. Journ.* XIII., 166. *Sacc. Syll.* 6333.

Pileus dimidiate, zoned, umber, velvety, sulcate (3 c.m. diam.); pores large ( $1\frac{1}{4}$  m.m.).

On *Casuarina* trunks. Victoria. Queensland. W. Australia. S. Australia.

GENUS 32. **FAVOLUS**. *Fries.*

Hymenium reticulately cellular or alveolate; pits radiating, formed by the densely anastomosing gills, elongated, substipitate.

**895. Favolus squamiger.** *Berk. Linn. Journ.* XIII., 166. *Sacc. Syll.* 6430.

Pileus umbilicate, variegated with adnate scales (4-5 c.m. broad); margin ciliate; stem short, squamose (4 m.m. thick, dilated upwards); pores broad, elongated, decurrent (4 × 2 m.m.).

On trunks. N.S.Wales. (Fig. 62.)

**896. Favolus Boucheanus.** *Klotsch. Linn.* VIII., 318. *Sacc. Syll.* 6437.

Pileus fleshy, tough, plane, unequal, even, then squamose, gilvous (4 c.m. broad); stem excentric, short, tomentose, brownish below; pores thin, oblong hexagonal, dentate, pale orange.

On trunks. Queensland.

**897. Favolus scaber.** *B. & Br. Linn. Journ.* XIV., 57. *Sacc. Syll.* 6439.

Pileus white, then smoky (6 c.m. broad), rough; stem very short, arising from an orbicular disc; pores alveolate (1 m.m. broad), edge thin, torn, ochre.

On dead wood. Queensland.

**898. Favolus pusillus.** *Fr. Linnæa* v., 511, t. XI., f. 2. *Sacc. Syll.* 6449.

Pileus rather membranaceous, reniform, smooth, tawny (1 c.m. diam.); stem very short, turning black; pores elongated, flexuous, becoming tawny.

On trunks. Tasmania.

**899. Favolus rhipidium.** *Berk. Hook. Journ.* 1847, 319. *Sacc. Syll.* 6460.

Pileus coriaceous, reniform (2 c.m.), concentrically sulcate, pale tan-colour, cuticle falling away in minute mealy areolæ; stem lateral, short, dilated above, pruinose (6-7 m.m. long), yellowish when dry; pores small, whitish, angular, denticulate, sometimes elongated.

On branches, wood, etc. Victoria. Queensland. N.S.Wales.

**900. Favolus hispidulus.** *B. & C. Linn. Journ.* XIII., 166. *Sacc. Syll.* 6455.

Pileus thin, reniform, lineate behind, hispid, reticulated, delicately tomentose in front and tessellate (6 × 4 c.m.); margin very thin, pellucid, sometimes fimbriate; stem short, cylindrical, rather hispid (4-8 m.m. long); pores simple, elongated (1½ m.m. diam.).

On stems. S. Australia.

GENUS 33. **LASCHIA**. *Fries.*

Between gelatinous and tremellose, membranaceous when dry, reticulate in a honeycomb manner beneath. Pores homogeneous with the pileus, thin and flaccid.



- 901. *Laschia caespitosa*.** *B. Sacc. Syll.* 6507.=*Favolus caespitosus*, *Berk. Linn. Journ.* XIII., 166.

Densely caespitose; pilei conical, umbilicate; stems smooth, united at the base (50 or more in a tuft, 2 in. high); pores medium, decurrent, angular towards the margin, elongated behind.

On branches. Queensland. N.S.Wales.

- 902. *Laschia tremellosa*.** *Fr. Linnæa* v., 533. *Sacc. Syll.* 6504.

Campanulate or effused, adnate behind, membranaceous, gelatinous, wholly dark reddish, rather thick, villose and rather reticulate at the base, coriaceous when dry; hymenium deeply folded and alveolate, pits unequal, narrower towards the margin; spores reniform,  $10 \times 5 \mu$ .

On rotten wood. Victoria. Queensland. N.S.Wales. W. Australia.

- 903. *Laschia Thwaitesii*.** *B. & Br. Linn. Journ.* XIV., 58. *Sacc. Syll.* 6508.

Cæspitose; pilei tremelloid, often oblique, even, orange (8 m.m. diam.); stem slender (18 m.m. long), white; pores of the same colour.

On dead wood. Queensland.

- 904. *Laschia pustulata*.** *B. & Br. Linn. Journ.* XIV., 58. *Sacc. Syll.* 6516.

Pileus ochraceous, then ferruginous, tuberculose (4 m.m. broad), rather orbicular; stem oblique, of the same colour (2 m.m. long), rising from an orbicular base; pores few, broad, ochraceous.

On rotten wood. Queensland. (Fig. 64.)

- 905. *Laschia micropus*.** *Berk. Linn. Journ.* XIII., 170. *Sacc. Syll.* 6518.

Tawny-yellow, minute, pezizaform (4-6 m.m. broad), shortly stipitate, at length reflexed; pileus reticulately veined; hymenium even.

On trunks. Victoria.

***Laschia cinerascens*.** *Kalchb.*

No trace of this species.

#### GENUS 34. **CAMPBELLIA.** *Cke. & Mass.*

Fleshy, soft, tremellose, horny when dry, pileate and stipitate; hymenium inferior. Flesh more or less lacunose (especially when dry), spongy. Pores large, angular, usually toothed or serrate at the edge, rather deep, with thin flaccid dissepiments. Trama descending. Spores elliptical, brown.

- 906. *Campbellia infundibuliformis*.** *Cke. & Mass. Grev.* XVI., 73, XVIII., 87. *Sacc. Syll.* 6523.

Tremelloid, large (5-6 in. diam.), stipitate. Pileus deeply infundibuliform, thick, even, rugulose when dry; margin obtuse,

crispate; stem short, thick (1 in. long, 1 in. thick), sulcately rugose, expanded to a disc at the base, hymenium porose; pores above elongated, irregular, angular, rather tubæform, shortened below, and reticulate, dissepiments rather thin and dentate. Spores profuse, elliptic, golden brown,  $12 \times 8 \mu$ .

On wood. Victoria. (Fig. 67.)

### GENUS 35. **MERULIUS.** *Hall.*

Hymenophore formed from the interwoven mucous mycelium; hymenium soft, waxy, continuous, the surface reticulated with obtuse folds, incompletely porose, at length gyrose and obsoletely dentate.

#### **907. Merulius corium.** *Fr. Hym. Eur.* 591. *Sacc. Syll.* 6532.

Resupinately effused, soft, rather papery, circumference at length free and reflexed, villose beneath, white; hymenium reticulately porose, flesh colour, or pale tan colour. Spores elliptical or ovate.

On trunks and branches. Victoria. Queensland. W. Australia. Tasmania.

#### **908. Merulius pelliculosus.** *Cooke Grev.* xix., 109.

Broadly effused, membranaceous, closely adnate, white, hyaline when dry, like a thin pellicle; margin naked, hymenium reticulated with shallow angular pores, scarcely visible when dry (about  $\frac{1}{2}$  m.m. diam.).

On branches of *Acacia*. Victoria.

#### **909. Merulius Baileyi.** *B. & Br. Linn. Trans.* II., 62, t. 13, f. 1. *Sacc. Syll.* 6538.

Pileus flabelliform, viscid, smooth (5 c.m. broad,  $3\frac{1}{2}$ -4 c.m. long); margin crenate, rugose, inflexed, flesh yellow; pores irregular at the margin, obsoletely radiating, dissepiments obtuse, flexuous.

On trunks. Queensland. (Fig. 63.)

#### **910. Merulius aureus.** *Fr. Hym. Eur.* 592. *Sacc. Syll.* 6542.

Effused, thin, membranaceous, adherent, golden yellow; margin thin, villose, of the same colour; hymenium plicately porose, gyrose. Spores globose or subglobose, uniguttulate, pale yellow,  $8 \mu$  diam.

On wood. Queensland.

#### **911. Merulius tenuissimus.** *B. & Br. Linn. Trans.* II., 62. *Sacc. Syll.* 6550.

Umber brown beneath, and the very thin margin white, folds rather reticulate, distant, slightly elevated, flesh white.

Parasitic on *Hymenochaete*. Queensland.

- 912. *Merulius serpens.*** *Tode. Fr. Hym. Eur.* 593. *Fr. Icon. t.* 193, *f.* 3. *Sacc. Syll.* 6553.

Crustaceous, adnate, thin, becoming smooth, pallid, then reddish; margin byssoid, white; folds at first vein-like, then porose, angular, entire, crispate. Spores cylindrical, hyaline,  $4 \times 2 \mu$ .

On rotten wood. Queensland.

- 913. *Merulius pallens.*** *Berk. Fr. Hym. Eur.* 593. *Sacc. Syll.* 6559.

Adnate, fleshy, rather gelatinous, thin, inseparable, slightly downy, margin indeterminate; folds porose.

On trunks. Victoria. Tasmania.

- 914. *Merulius lacrymans.*** *Sch. Fr. Hym. Eur.* 594. *Sacc. Syll.* 6563.

Large, between spongy and fleshy, moist, ferruginous yellow, web-like and velvety beneath, swollen at the tomentose white margin, folds broad, porose or gyrose and dentate; spores ovate, unequal-sided, dark yellowish,  $10-12 \times 5-6 \mu$ .

On rotten wood, etc. ("Dry rot.") Queensland. W. Australia.

GENUS 36. **POROTHELIUM.** *Fr.*

Whole fungus developed from the interwoven mycelium, resupinate and expanded, rather membranaceous, at first distinguished by prominent papillæ, which are soon porose and open, and at length elongated tubulose.

- 915. *Porothelium subtile.*** *Fr. Hym. Eur.* 595. *Sacc. Syll.* 6576.

Irregularly effused, membranaceous, snowy white, margin equal, naked, porose warts distinct, at length elongated, cylindrical, oblique, with a tinge of red.

On bark. Tasmania. (Fig. 65.)

GENUS 37. **SOLENIA.** *Hoffm.*

Receptacle none. Tubes membranaceous, rather cylindrical, or turbinate, free amongst themselves, connivent at the mouth.

- 916. *Solenia candida.*** *Pers. Disp. p.* 36. *Sacc. Syll.* 6589.

Scattered, cylindrical, smooth, white.

On rotten wood. Queensland. (Fig. 66.)

- 917. *Solenia ochracea.*** *Hoffm. Fr. Hym. Eur.* 596. *Sacc. Syll.* 6594.

Scattered, clavately-cylindrical, tomentose, ochraceous, tawny white within; spores ovoid, hyaline,  $6 \times 4 \mu$ .

On rotten wood. Tasmania.

- 917\*. *Solenia sulphurea.*** *Sacc. & Ellis. Sacc. Syll.* 6596.

Densely gregarious, minute, cup-like, shortly stipitate, sulphur-coloured, strigosely hairy, hairs rough, continuous; basidia clavate, guttulate; spores obovate,  $8-9 \times 7-8 \mu$ , hyaline.

On branches. Victoria.

*Family III. HYDNEI.*

Hymenium inferior, or on both sides, spread over the surface of spines, teeth, tubercles, crests, or persistent papillæ.

GENUS 38. **HYDNUM.** *Linn.*

Hymenium inferior, aculeate; spines subulate, separate at the base. Fleshly or woody fungi, stipitate, sessile, or resupinate.

I. **MESOPUS.** *Stem central.*\* **CARNOSA.** *Substance fleshy.*

- 918. *Hydnum lævigatum.*** *Swartz. Fr. Hym. Eur. 599. Sverig. Svamp. t. 81. Sacc. Syll. 6624.*

Pileus fleshy, compact, firm, regular, plane, even, smooth, umber (10-16 c.m. diam.), margin circinate (not repand); stem thick, even (variable); spines thin, paler; spores 10-15  $\mu$  long.

Solitary in woods. Queensland. Tasmania.

- 919. *Hydnum repandum.*** *Linn. Fr. Hym. Eur. 601. Sver. Svamp. t. 15. Sacc. Syll. 6633.*

Pileus fleshy, fragile, rather repand, smooth, deformed, pallid (5-16 c.m. diam.), sometimes floccosely pruinose; stem rather short, of the same colour (2-6 c.m. long, 2-3 c.m. thick); spines unequal, of the same colour; spores globose, obtusely apiculate at one end, hyaline, 5-8  $\mu$ .

In woods. Edible. Tasmania.

- 920. *Hydnum ambustum.*** *Cke. & Mass. Grev. xvi., 32.*

Pileus fleshy, membranaceous, convex, then plane, smooth, brick-red, turning black ( $\frac{1}{2}$ - $\frac{3}{4}$  in. broad); stem erect, slender, equal, smooth, paler than the pileus (1 in. long), somewhat cæspitose, often rooting; spines equal, acute, white; spores globose, 8-10  $\mu$ .

On sandy soil. Victoria.

- 921. *Hydnum crocidens.*** *Cooke Grev. xix., 45.*

Mesopod. Pileus fleshy, thin, plane, rather umbilicate, smooth, even (1-1 $\frac{1}{2}$  in. diam.), ochraceous yellow; stem central, slender, equal, even, or longitudinally striate, when dry smooth, of the same colour as the pileus (1 $\frac{1}{2}$  in. long, 2-3 m.m. thick). Spines rather long, aculeate, reaching the stem, but scarcely decurrent, shorter towards the margin, flexible, golden yellow; spores subglobose, 4-5  $\mu$ .

On the ground. Victoria. (Fig. 69.)

II. **LIGNOSA.** *Pileus tough, woody or leathery.*

- 922. *Hydnum nigrum.*** *Fr. Hym. Eur. 605. Sacc. Syll. 6657.*

Pileus corky, rigid, tomentose, without zones, blue black (10-12 c.m. broad) internally and the stout stem black (2 $\frac{1}{2}$  c.m. long), margin and spines white; spores globose, papillose, hyaline, 4-5  $\mu$  diam.

In woods. N.S.Wales.

- 923. *Hydnum graveolens.*** *Delast. Fr. Hym. Eur.* 605.  
*Fr. Icon. t. 6, f. 1. Sacc. Syll.* 6660.

Pileus coriaceous, thin, soft, without zones, rugose, dark brown, brown within (2-3 c.m. diam.), margin whitish; stem slender, spines short, grey. Odour of melilot.

In woods. Victoria. Queensland.

- 924. *Hydnum tomentosum.*** *Fries Syst. Myc.* i., 405.  
 = *Hydnum cyathiforme, Schaff. Sacc. Syll.* 6664.

Pileus coriaceous, thin, plane, then infundibuliform, zoned, pale cinereous ( $1\frac{1}{2}$ -5 c.m. broad) as well as the slender smooth stem ( $2\frac{1}{2}$  c.m. long), disc rather tomentose, margin white as well as the spines. Spores globose, guttulate, hyaline, 2-3  $\mu$  diam.

In woods. Queensland.

### III. MERISMA. *Much branched, or tuberculiform.*

- 925. *Hydnum coralloides.*** *Scop. Carn.* 472. *Fr. Hym. Eur.* 607. *Sverig. Svamp. t. 34. Sacc. Syll.* 6677.

Much branched, white, at length yellowish, entirely divided into intricate attenuated branches (clusters several inches in diameter); spines one sided, subulate, entire, spores globose, guttulate, hyaline, 4-6  $\mu$  diam.

On rotten wood. Queensland. N. Zealand.

### IV. APUS. *Pileus sessile.*

- 926. *Hydnum meruloides.*** *Berk. Linn. Trans.* ii., 63, t. XIII., f. 4. *Sacc. Syll.* 6705.

Pileus dimidiate, thick, externally smooth, pallid, rugose with prominent lines ( $3\frac{1}{2}$ -4 c.m. diam.,  $2\frac{1}{2}$  c.m. long), hymenium bright orange, spines cylindrical, obtuse (2 m.m. long).

On wood. Queensland.

- 927. *Hydnum flavum.*** *Klotsch. Ann. Nat. Hist.* x., 380.  
*Sacc. Syll.* 6722.

Pileus sessile, nearly orbicular, convex, thin, pallid yellow, smooth (3 c.m. broad), hymenium pallid; spines very short, granulate denticulate.

On branches. Queensland.

- 928. *Hydnum ochraceum.*** *Pers. Fr. Hym. Eur.* 612.  
*Sacc. Syll.* 6725.

Pilei effused and reflexed, coriaceous, thin, zoned, ochraceous (2-8 c.m. broad); spines small, ochraceous flesh colour. Spores subspherical, 5  $\mu$  diam.

On trunks. Victoria. Queensland.

- 929. *Hydnum Muelleri.*** *Berk. Linn. Journ.* xvi., 167.  
*Sacc. Syll.* 6727.

Resupinate, then reflexed, sometimes connate, velvety, somewhat zoned. Spines long, slender, ochraceous.

On wood. Queensland. N.S. Wales.

**930. *Hydnum delicatulum.*** *Klotsch. Ann. Nat. Hist.* III., 395. *Sacc. Syll.* 6731.

Pileus effused, reflexed, coriaceous, thin, margin reflexed, narrow, yellowish, hymenium becoming whitish; spines very thin, regular, distant, setaceous, punctate with brown.

On trunks. N.S. Wales.

**931. *Hydnum gilvum.*** *Berk. Hook. Journ.* 1851, 168. *Sacc. Syll.* 6733.

Pileus flabelliform, imbricate, thin, ochraceous, or pale gilvous, invested with cartilaginous, radiating hairs, strigose at the base (8 c.m. broad,  $5\frac{1}{2}$  c.m. long); substance spongy, fibrous; margin strigose, acute; spines acute, thin, tapering, entire, becoming brownish. Spores uniguttulate,  $13-25 \times 5-8 \mu$ .

On rotten wood. Queensland.

V. RESUPINATÆ. *Absolutely resupinate.*

**932. *Hydnum membranaceum.*** *Bull. t.* 481, f. 1. *Fr. Hym. Eur.* 613. *Sacc. Syll.* 6738.

Subiculum effused, waxy, membranaceous, adglutinate, smooth, tawny ferruginous; spines subulate, crowded, equal, acute, of the same colour.

On rotten wood. Queensland.

**933. *Hydnum dispersum.*** *Berk. Hook. Journ.* 1845, 58. *Sacc. Syll.* 6757.

Wholly resupinate, forming long patches; subiculum thin, waxy, at length evanescent; spines of medium size, compressed and fasciculate at the base, subulate at the apex (1 m.m. long), tawny when dry.

On rotten wood. W. Australia.

**934. *Hydnum alutaceum.*** *Fries Syst. Myc.* I., 417. *Sacc. Syll.* 6761.

Subiculum longitudinally effused, crustose, adnate, smooth, pallid, ochraceous (8-13 c.m. long); margin naked; spines minute, crowded, equal, acute.

On rotten wood. Victoria.

**935. *Hydnum xanthum.*** *Berk. & Curt. Grev.* I., 98. *Sacc. Syll.* 6778.

Wholly resupinate, thin, margin delicately tomentose, then waxy (5-8 c.m. broad); spines yellow, scattered, compressed, subdivided, waxy; apices, when perfect, white and tomentose.

On trunks.

var. *teretidens.* *Berk. Chall.* 118.

Spines not compressed, pendulous from the wholly resupinate, brighter, waxy, pale orange pileus.

On trunks. N.S. Wales.

- 936. *Hydnum investiens*.** *Berk. Hook. Journ.* 1845, 57.  
*Sacc. Syll.* 6779.

Wholly resupinate, broadly expanded, subiculum at first tomentose, at length compact, smooth; spines (1-2½ m.m. long) compressed, in the middle acute and penicellate, pale ochraceous.

In cavities of trunks of *Xanthorrhæa*. W. Australia.

- 937. *Hydnum nudum*.** *Fr. Hym. Eur.* 615. *Sacc. Syll.* 6795.

Subiculum effused, thin, rather gelatinous, adglutinate, smooth, flesh colour, then watery yellow (10-13 c.m. long); spines crowded, unequal, furcate, and fimbriate, of the same colour (scarcely 2 m.m. long).

On rotten wood. Queensland. N.S.Wales. Tasmania.

- 938. *Hydnum cervinum*.** *Berk. Fl. Tasm.* II., 256. *Sacc. Syll.* 6809.

Resupinate, effused, immarginate, pallid vinous, at first delicately tomentose; spines setiform.

On rotten wood. Tasmania.

- 939. *Hydnum mucidum*.** *Pers. Syn.* 561. *Fr. Hym. Eur.* 616. *Sacc. Syll.* 6812.

White; subiculum very broad, membranaceous, soft, evanescent (often 30 c.m. and more); margin and beneath villose; spines elongated, acicular, crowded, slender, flaccid, equal.

On trunks. Queensland.

- 940. *Hydnum flicicola*.** *Berk. Fl. Tasm.* II., 256. *Sacc. Syll.* 6824.

Resupinate, effused, immarginate, white, thin; spines connected at the base and flattened, apex acute.

On fern stems. Tasmania.

- 941. *Hydnum isidioides*.** *Berk. Hook. Journ.* 1845, 58. *Sacc. Syll.* 6836.

Wholly resupinate; subiculum crustaceous, white (10 c.m. broad); margin subfimbriate, separating from the matrix in chips. Spines short, obtuse, at first distinct, then confluent.

On the hymenium of *Polyporus*. W. Australia.

#### GENUS 39. **TREMELLODON.** *Pers.*

Fungi gelatinous, pileate, aculeate beneath; spines subulate, equal.

- 942. *Tremellodon gelatinosum*.** *Scop. Fr. Hym. Eur.* 618. *Sacc. Syll.* 6862.

Pileus gelatinous, tremulous, dimidiate, substipitate, papulose, glaucous, then brownish; spines soft, glaucous. Spores globose, rather irregular, hyaline, 7 µ diam., or 7-8 × 5 µ.

On the ground and trunks. Queensland. (Fig. 68.)

GENUS 40. **SISTOTREMA.** *Pers.*

Fungi fleshy; hymenium inferior, interruptedly lamellose and dentate. Teeth rather waxy, without order (not radiating), distinct, parting freely from the pileus. Spores oval.

**943. Sistotrema irpicinum.** *B. & Br. Linn. Trans. II., 63, t. 13, f. 23. Sacc. Syll. 6872.*

Pileus subcuticular, thick, delicately tomentose, pallid, descending deeply behind; hymenium umber, teeth irregular, here and there lamellose, in the descending part like an *Irpex*.

On dead branches. Queensland.

GENUS 41. **IRPEX.** *Fries.*

Hymenium inferior, from the first dentate. Teeth firm, subcoriaceous, acute, continuous with the pileus, seriatly or reticulately disposed; connected at the base, the folds lamellose, or honeycombed.

**944. Irpex hexagonoides.** *Kalchb. Grev. ix., p. 1. Sacc. Syll. 6876.*

Wholly white; pileus between suberose and leathery, running down behind ( $2\frac{1}{2}$  c.m. broad), inconspicuously zoned, softly villose, teeth reticulately disposed, in a honeycomb manner, and regular, foliaceous, rather acute.

On trunks. N.S. Wales.

**945. Irpex zonatus.** *Berk. Hook. Journ. 1854. Sacc. Syll. 6888.*

Pileus wood-colour; pilei imbricate, rather flabelliform, coriaceous, rigid, zoned, delicately tomentose, becoming smooth (10 c.m. diam.); margin lobed, teeth compressed at the base (2 lines long), smooth.

On dead wood. Victoria. Queensland. N.S. Wales.

**946. Irpex maximus.** *Mont. Ann. Sci. Nat. 1837. Sacc. Syll. 6891.*

Pileus coriaceous, thin, reniform, plano-convex, at the first covered with an evanescent pallid tomentum, becoming naked, repand about the margin, and concentrically sulcate (8-15 c.m. diam.); teeth crowded, acute, pubescent, reticulately connected at the base, ochrey-white.

On trunks. Queensland.

**947. Irpex flavus.** *Klotsch. Linn. VIII., 488. Sacc. Syll. 6895.*

Pileus effused, spongy soft, yellow (2 c.m. or more); margin shortly reflexed, tomentose, teeth compressed, seriate, of the same colour, reticulately connected at the base.

On trunks, etc. Victoria. Queensland. S. Australia. (Fig. 70.)



- 948. *Irpex tabacinus*.** *B. & C. North Am. Fungi* 198.  
*Sacc. Syll.* 6902.

Briefly reflexed, subzonate, bay-brown, pubescent, deeply decurrent behind; hymenium of the same colour; teeth compressed, obtuse, unequally seriate.

On trunks. Queensland.

- 949. *Irpex Archeri*.** *Berk. Fl. Tasm.* 11., 275, t. 183, f. 1.  
*Sacc. Syll.* 6925.

White, resupinate, margin weblike, tomentose; teeth reticulately connected, short, palmate.

On rotten wood. Tasmania.

- 950. *Irpex sinuosus*.** *Fries Hym. Eur.* 621. *Sacc. Syll.* 6883.

Pileus effused, shortly reflexed, thin, soft, zoneless, even, white; teeth subulate, of the same colour, connected at the sinuous base.

var. **cervicolor.** *B. & Br., Ceylon Fungi*, No. 552.

Wholly fawn colour.

On wood. Queensland.

#### GENUS 42. **RADULUM.** *Fries.*

Hymenium tuberculose. Tubercles rude, deformed, commonly elongated, obtuse, waxy, arranged without order, distinct.

- 951. *Radulum molare*.** *Fr. Hym. Eur.* 623. *Sacc. Syll.* 6931.

Broadly effused, crustaceous, smooth, pale colour, somewhat yellow (3-4 c.m.); tubercles deformed, short, rather conical, smooth, scattered or conglomerate and confluent.

On trunks. Queensland. (Fig. 71.)

#### GENUS 43. **PHLEBIA.** *Fr.*

Hymenium on both sides, waxy, subgelatinous when moist, soft, smooth, continuous, at first corrugated in crested wrinkles; ridges crowded, interrupted, persistent, with the edge entire.

- 952. *Phlebia merismoides*.** *Fr. Syst. Myc.* 1., 427. *Sacc. Syll.* 6950.

Effused, even, or incrusting, branched, flesh colour, then livid ( $2 \times 10$  c.m.), white, villose beneath, margin orange, strigose; ridges simple, straight, crowded. Spores minute,  $3\frac{1}{2} \times 3 \mu$ .

On trunks, etc. Queensland.

- 953. *Phlebia radiata*.** *Fr. Hym. Eur.* 625. *Sacc. Syll.* 6951.

Roundish, equal, everywhere smooth, red flesh colour ( $2\frac{1}{2}$ -8 c.m.), margin radiately dentate; folds straight, radiating; spores elongate, curved, hyaline,  $4-5 \times 1-1\frac{1}{2} \mu$ .

On bark. Queensland.

- 954. *Phlebia hispidula*.** *Berk. Linn. Journ.* xvi., 167. *Sacc. Syll.* 6960.

Resupinate, reflexed, rubiginous, zoned, velvety and hispid; hymenium dark brown, radiately rugose.

On trunks. S. Australia.

- 955. *Phlebia reflexa*.** *Berk. Hook. Journ.* 1845. *Sacc. Syll.* 6964.

Resupinate, dimidiate, reflexed, cracked; pileus spongy, tomentose, zoned (3-4 c.m. diam.); hymenium brown, purplish black when dry.

On wood. Victoria. Queensland. N.S.Wales. New Guinea. (Fig. 72.)

- 956. *Phlebia coriacea*.** *Berk. Linn. Journ.* xviii., 385. *Sacc. Syll.* 6965.

Pileus spathulate, coriaceous, brown (6 c.m. long,  $2\frac{1}{2}$  c.m. broad); folds irregular.

On the ground. Queensland.

GENUS 44. **GRANDINIA.** *Fries.*

Hymenium on both surfaces, continuous, waxy, papillosely warted or granulose; granules globose or hemispherical, entire, obtuse, or the apex excavated, crowded, regular, smooth, persistent. Crustaceous, effused, soft.

- 957. *Grandinia granulosa*.** *Fr. Hym. Eur.* 626. *Sacc. Syll.* 6969.

Waxy, broadly effused, adglutinate, tan colour, margin determinate, smooth, hymenium equal, continuous; granules hemispherical, equal, crowded; spores spherical, small, hyaline,  $2-2\frac{1}{2}$   $\mu$ .

On old wood. Queensland. Tasmania.

- 958. *Grandinia ocellata*.** *Fr. Hym. Eur.* 626. *Sacc. Syll.* 6971.

Waxy, broadly effused, adglutinate, livid; margin indeterminate, sterile, hymenium unequal, continuous, granules crowded, subconical, obtuse, equal, of the same colour; often with the apex white, or collapsed and excavated, so as to appear ocellate.

On rotten wood. Chatham Island.

- 959. *Grandinia crustosa*.** *Fr. Hym. Eur.* 627. *Sacc. Syll.* 6976.

Floccosely mealy, irregularly effused, crustaceous, adnate, white; granules subrotund, crowded, obtuse, apex of the same colour.

On bark. Victoria.

- 960. *Grandinia australis*.** *Berk. Fl. Tasm.* ii., 257. *Sacc. Syll.* 6980.

Resupinate, effused, immarginate, pallid, cracked, snow white within; hymenium granulate, granules one or two papillate.

On rotten wood. Victoria. Tasmania. (Fig. 73.)

**961. Grandinia glauca.** *Cke. Grev. xvii., 55.*

Rather waxy, broadly effused, adglutinate, glaucous; margin determinate, hymenium equal, minute, crowded, of the same colour. Spores  $8 \times 4 \mu$ .

On naked wood. Queensland.

GENUS 45. **ODONTIA.** *Pers.*

Resupinately effused, dry. Hymenium composed of papillose warts seated on the fibrillose subiculum, warts cristate at the tips, penicellate.

**962. Odontia secernibilis.** *Berk. Fl. Tasm. II., 257. Sacc. Syll. 7018.*

Resupinate, membranaceous, separable, white. Warts very short, compressed, subdivided above.

On rotten wood. Tasmania. (Fig. 74).

GENUS 46. **KNEIFFIA.** *Fries.*

Loosely fleshy, soft, flocculose and collapsing when dry; hymenium continuous, without granules or warts, but rough with scattered or fasciculate rigid setæ. (Fig. 75).

**963. Kneiffia Mulleri.** *Berk. Linn. Journ. xvi., 167. Sacc. Syll. 7022.*

Wholly resupinate, thin, mealy when young, here and there cracking; pseudo-granules falling off readily (then resembling *Porothelium*), white at the apex.

On rotten wood. S. Australia.

Family IV. **THELEPHOREI.**

Hymenium inferior, or on both surfaces, coriaceous or waxy, even, rarely ribbed or papillose. Spores continuous, hyaline or coloured.

GENUS 47. **CRATERELLUS.** *Fries.*

Hymenium waxy, membranaceous, distinct, but adnate to the hymenophore, inferior, smooth, even, or rugose; spores white.

**964. Craterellus cornucopioides.** *Linn. Fr. Hym. Eur. 631. Sacc. Syll. 7042.*

Pileus submembranaceous, trumpet-shape, pervious, squamulose, sooty-brown, becoming black (8 c.m. or more high); stem hollow, smooth, black; hymenium even, at length rugulose, cinereous; spores ellipsoid, hyaline,  $12-14 \times 7-8 \mu$ .

In woods. Edible. Queensland.

**965. Craterellus confuens.** *B. & Curt. Linn. Journ. ix., 423. Sacc. Syll. 7046.*

Pileus densely connate, orange, deeply funnel-shaped (5 c.m. high,  $2\frac{1}{2}$  c.m. broad), veins conspicuous, reticulate, decurrent.

On the ground. Victoria. Queensland.

**966. *Craterellus pusio*.** *Berk. Fl. Tasm.* II., 258.

Orange, pileus lateral, convex (4-6 m.m. broad); stem even, thickened upwards (2-3 m.m. long); hymenium rugose, veined.

Amongst moss. Tasmania.

**967. *Craterellus multiplex*.** *Cke. & Mass. Grev.* XVIII., 25.

Stem slender, erect, rugose (2 in. long, 2 lin. thick); pilei reniform or obovate, attached at the base to the stem in a series of five or six superimposed (1 c.m. broad), submembranaceous, depressed behind, smooth, ochraceous, margin a little incurved, thin, hymenium flesh-colour, longitudinally rugose; spores ( $3\frac{1}{2}$   $\mu$  diam.) globose, very numerous, hyaline.

On the ground. Tasmania. (Fig. 77).

GENUS 48. **LACHNOCLADIUM.** *Lev.*

Coriaceous or subcoriaceous, or rather cartilaginous, branched, tomentose or setulose, branches compressed, or tapering.

**968. *Lachnocladium furcellatum*.** *Lev. Ann. Sci. Nat.* 1846, 159. *Sacc. Syll.* 8175. = *Clavaria simulans*. *B. & Br.*

Ascending, somewhat ferruginous, branches solid, repeatedly dichotomous, distant, tough, acuminate, velvety.

On rotten wood. Queensland.

*Lachnocladium similis* (*Clavaria simulans*), B. & Br., is only a dwarf form of this from Queensland.

**969. *Lachnocladium Brasiliense*.** *Lev. Ann. Sci. Nat.* *Sacc. Syll.* 5177.

Very shortly stipitate, much branched (3-5 c.m. high), branches tapering, dichotomous, ochraceous white, apices acute.

On trunks. Queensland.

**970. *Lachnocladium semivestitum*.** *B. & Curt. N. Amer. Fungi* 226. *Sacc. Syll.* 8180.

Delicate, repeatedly furcately branched (2-4 c.m. high), branches tomentose, the apices smooth.

On the ground. Queensland.

**971. *Lachnocladium setulosum*.** *Berk. Hook. Journ.* 1845, p. 60. *Sacc. Syll.* 8188. = *Clavaria setulosa*. *Berk.*

Ochraceous, small ( $2\frac{1}{2}$  c.m. high); stem short, irregularly divided; branches compressed, furcate, obtuse or flabellate, pubescent.

On the ground. W. Australia.

**972. *Lachnocladium rameale*.** *B. & Br. Ceyl.* 605. *Sacc. Syll.* 8183.

Dark purple, filiform, furcate (2 c.m.), apices acute, mixed with thick setae at the base; mycelium very thin, white.

On branches. Queensland.

- 973. *Lachnocladium flagelliforme*.** *Berk. N. Zeal.* 186.  
*Sacc. Syll.* 8018.

Very much branched, divided to the base (5 c.m. long); branches rather fasciculate, fastigate, cylindrical, elongated, forked, acute, undivided at the tips.

On naked ground. Queensland. New Zealand. (Fig. 79).

GENUS 49. **THELEPHORA.** *Ehr.*

Hymenium inferior, or on both surfaces, continuous with the hymenophore, and similar, even or ribbed, without an intermediate stratum. Spores globose, ovoid, even or rough, hyaline or coloured.

- 974. *Thelephora conrescens*.** *Fr. Pl. Preiss.* 136. *Sacc. Syll.* 7087.

Cæspitose, growing together ( $2\frac{1}{2}$ -4 m.m. high); stem brown; pileus infundibuliform, fibrously striate, nearly entire; stems and hymenium even, becoming cinereous.

In moist places. W. Australia.

- 975. *Thelephora caryophyllea*.** *Schæff. Fr. Hym. Eur.* 634. *Sacc. Syll.* 7098.

Purplish brown; pileus somewhat coriaceous, depressed, fibrously torn; margin incised or divided into a few linear branches ( $1-1\frac{1}{2}$  c.m. high); stem short, hymenium nearly even, smooth; spores sphaeroid, rough, brownish, 8  $\mu$  diam.

Amongst grass. W. Australia.

- 976. *Thelephora congesta*.** *Berk. Linn. Journ.* xvi., 168.  
*Sacc. Syll.* 7107.

Small, gregarious, dark purple, sparingly furcately branched, pubescent downwards (1 in. high); branches subcylindrical, acute, fastigate, now and then compressed.

In moist places. Victoria. Queensland. N.S.Wales. (Fig. 78).

- 977. *Thelephora Archeri*.** *Berk. Fl. Tasm. t.* 183, *f.* 2.  
*Sacc. Syll.* 7116.

Dichotomous, stems connate below, branches compressed, dilated above, ochraceous (40 m.m. high); apices acute, brown.

On the ground. Victoria. Queensland. Tasmania.

- 978. *Thelephora myriomera*.** *Fr. Pl. Preiss.* 137. *Sacc. Syll.* 7129.

Cæspitose, papery, flattened and much branched, growing together (5-7 c.m. high); lobes ascending, dilated above, rounded, entire, sterile upwards, clad with radiating elevated lines, sooty-brown; hymenium inferior, ribbed and rugose, smooth, purple-brown.

On the ground. W. Australia.

- 979. *Thelephora multipartita*.** *Schwz. Fr. Epic.* 536. *Sacc. Syll.* 7142.

Coriaceous, cinereous brown; pileus smooth, much divided down to the stem in a branching manner, lacinia dilated above and incised ( $2\frac{1}{2}$  c.m. high), even and smooth beneath.

On the ground. Queensland.

- 980. *Thelephora intybacea.*** *Pers. Syn.* 567. *Fr. Hym. Eur.* 635. *Sacc. Syll.* 7144.

Cæspitose, soft, whitish, then ferruginous red, at length sooty brown, stem somewhat lateral, grown together (10-11 c.m. broad). Pilei imbricate, fibrous, dilated at the margin, at first fringed with white, then entire, and of one colour; hymenium inferior, papillose, rather floccose. Spores angularly sphaeroid or tuberculate, brownish,  $6-8\ \mu$  or  $7 \times 6\ \mu$ .

In woods. N.S. Wales.

- 981. *Thelephora terrestris.*** *Ehr. Fr. Hym. Eur.* 636. *Sacc. Syll.* 7145.

Cæspitose, soft, brown, turning blackish; pilei imbricate, flattened, fibrously strigose, without zones, running down into the sublateral stem; margin similar (2-5 c.m. broad), hymenium inferior, radiately rugose. Spores  $10 \times 6-7\ \mu$ .

On the ground. Victoria.

- 982. *Thelephora laciniata.*** *Pers. Syn.* 567. *Sacc. Syll.* 7147.

Soft, coriaceous, encrusting, ferruginous brown; pilei somewhat imbricate, effused-reflexed, fibrously scaly; margin fibrously fimbriate (6-7 c.m. broad), at first whitish, hymenium inferior, papillose, flocculose. Spores angularly globose, or tuberculate, brownish,  $6-9\ \mu$  diam.

On trunks and the ground. Victoria.

- 983. *Thelephora stereoides.*** *Cke. & Mass. Grev.* xviii., 5.

Coriaceous. Pilei effused, reflexed, extending 3-4 in., villose, ferruginous; margin acute, crispate, hymenium darker, rugose. edge paler, rufescent. Spores globose, warted, brown ( $7-8\ \mu$  diam.).

On bark. Victoria.

\* *Resupinate, incrusting.*

- 984. *Thelephora cristata.*** *Fr. Hym. Eur.* 637. *Sacc. Syll.* 7159.

Incrusting, rather tough, pallid, running out into branches or laciniae, apices subulate or fimbriate; hymenium in even places and on the sides of branches papillose. Spores subglobose, hyaline, echinulate,  $6-7 \times 4-5\ \mu$ .

Running over mosses, grass, etc. Queensland.

- 985. *Thelephora riccioides.*** *Berk. Fl. Tasm.* II., 258. *Sacc. Syll.* 7173.

Resupinate, closely affixed, radiately branched (7-8 c.m. broad), pallid.

On naked soil. Tasmania.

- 986. *Thelephora pedicellata.*** *Schwein. Syn. Car.* 108. *Sacc. Syll.* 7188.

Effused, byssoid, rather compact, cinnamon brown (with a tinge of purple when old); margin undulate, white, rooting beneath with fasciculate fibres. Spores globose, echinulate.

On branches. Victoria. Queensland. W. Australia.

- 987. *Thelephora exsculpta*.** *Berk. Linn. Journ.* xvi., 168.  
*Sacc. Syll.* 7192.

Orbicular, grey, tinged with pink, wholly resupinate, smooth in the centre, about the margin dentately radiate, somewhat veined, pulverulent, here and there lacunose, dark purple beneath (6 c.m. broad).

On bark. Victoria.

GENUS 50. **CLADODERRIS.** *Pers.*

Pileus between leathery and woody; hymenium woody, marked with radiating branched ribs, persistent, at length rough with warts.

- 988. *Cladoderis australis*.** *Kalch. in Thum. Symb. Aust.*  
ii., No. 89. *Sacc. Syll.* 7210.

Pileus subexcentric, infundibuliform, oblique; margin broadly reflexed, fimbriately lobed, unequal, fibrously rugose, clad with a hoary tomentum, at length naked and lurid (5-7 c.m. diam.); stem woody, tomentose, villose, lurid grey (2½ c.m. long, 6-8 m.m. thick); hymenium tan-colour, costate; ribs swollen, obtuse, rather dichotomously branched, not tuberculose.

On trunks. N.S. Wales.

- 989. *Cladoderis australica*.** *Berk. in Herb. Sacc. Syll.*  
7211.

Infundibuliform, oblique, flabellate or semi-orbicular (7-15 c.m. long); margin spreading, thin, entire, or sinuately fimbriate, radiately rugose, obscurely zoned, tomentose, becoming smooth, ferruginous-bay; stem excentric or lateral, short, discoid, of the same colour (1 c.m. long, 6-10 m.m. thick); hymenium tan-colour, radiately sulcate, tuberculose; spores ovate,  $8 \times 5 \mu$ .

On wood. N.S. Wales. (Fig. 76).

- 990. *Cladoderis dendritica*.** *Pers. Freyc. Voy. t. 1, f. 4.*  
*Sacc. Syll.* 7215.

Coriaceous, soft, gilvous; pileus reniform, entire; margin scarcely denticulate (5-15 c.m. broad); stem lateral, firm; hymenium fibrillose, deliquescent.

On dead wood. Victoria. N.S. Wales. Queensland. New Guinea.

- 991. *Cladoderis spongiosa*.** *Fr. Fun. Nat.* 20. *Sacc. Syll.*  
7207.

Pileus broadly infundibuliform, spongy from a very dense, thick, soft, interwoven tomentum, elastic, zoneless, tan-colour; margin entire; stem central, very short, woody, tomentose externally; hymenium pallid; ribs swollen, fan-shaped, branched, at length rough with granules.

On trunks. Victoria.

GENUS 51. **STEREUM.** *Pers.*

Hymenium definite, inferior, coriaceous, intermediate stratum fibrillose, distinct from the inodermic pileus, even, smooth, persisting, unchanged; spores continuous, typically hyaline.

*I. Pileus sub-infundibuliform ; stem distinct, central, rarely obsolete.*

**992. *Stereum caperatum.*** *Berk. & M. Massee Mon. Thel. p. 161. Sacc. Syll. 7074.*

Pileus coriaceous, membranaceous, irregularly infundibuliform, rugose, plicate, ochraceous, hairy and fulvous in the centre; margin fimbriate or incised (5-15 c.m. or more); hymenium pallid, rugose; stem central, thick, tomentose, affixed by a disc (variable); spores ellipsoid, hyaline,  $6-7 \times 4-5 \mu$ .

On trunks. Victoria. Queensland. Lord Howe's Island.

var. **lamellatum.** *B. & Curt. Sacc. Syll. 7075.*

Stem elongated, velvety ( $3\frac{1}{2}$ -4 c.m. long, 4 m.m. thick).

On wood.

var. **spongipes.** *Berk. Sacc. Syll. 7088.*

Stem spongy, tomentose.

On wood. Queensland.

**993. *Stereum cyathiforme.*** *Fr. Epic. 545. Sacc. Syll. 7223.*

Coriaceous, whitish; pileus broad, wine-glass shaped, setose; margin acute, entire; stem and hymenium naked, smooth, even.

On wood. Victoria.

**994. *Stereum elegans.*** *Meyer. Fries Epicr. 545. Sacc. Syll. 7233.*

Cartilaginous, coriaceous; pileus infundibuliform, smooth, shining, rufescent and brown zones ( $2\frac{1}{2}$ -5 c.m. diam.); margin undulate-plicate; stem short; hymenium even, pruinose with white, flesh-coloured; spores subglobose,  $4-5 \mu$  diam.

On the ground. Victoria. N.S.Wales. Queensland. S. Australia.

**995. *Stereum nitidulum.*** *Berk. Hook. Journ. II., 638. Massee. Mon. Thel. 163. Sacc. Syll. 7229.*

Pileus infundibuliform, rather membranaceous, somewhat rigid, crenate, smooth, shining, zoned, brown ( $\frac{1}{2}$  in. diam.); stem central, thin ( $\frac{1}{4}$ - $1\frac{1}{2}$  in. long); hymenium white; spores subglobose,  $3-4 \mu$  diam.

Amongst grass. Queensland. Victoria.

**996. *Stereum Sowerbeii.*** *Berk. Massee Mon. Thel. p. 164. Sacc. Syll. 7070.*

Snowy white, infundibuliform, soon discoloured, aculeately rough above (1-2 in. high); hymenium smooth; stem variable; spores ellipsoid, hyaline,  $5 \times 4 \mu$ .

On the ground. Victoria. N.S.Wales. Queensland. Tasmania. S. Australia.

**997. *Stereum Thozetii.*** *Berk. Aus. Fungi 268. Mass. Mon. Thel. 165. Sacc. Syll. 7254.*

Pileus infundibuliform, tomentose, at length radiate, somewhat zoned, pallid ( $1-2\frac{1}{2}$  c.m. diam.); stem attenuated downwards



(scarcely 2 c.m. long); hymenium cracked, whitish, then chestnut-brown, polished; spores globose, 5-6  $\mu$ .

On trunks. Victoria. Queensland. S.W. Australia.

**998. *Stereum Moseleii*.** *Berk. Journ. Linn. Soc.* xvi., 48.  
*Mass. Mon. Thel.* 166. *Sacc. Syll.* 7247.

Pileus infundibuliform, then flabellate, delicately velvety, somewhat zoned, fawn-colour, margin paler ( $\frac{1}{2}$  in. across); stem arising from a small base ( $\frac{1}{4}$  in. high), opaque, pallid, hymenium reddish; spores ellipsoid,  $6 \times 4 \mu$ .

On sticks. Victoria.

**999. *Stereum prolificans*.** *Berk. Journ. Linn. Soc.* xvi., 41.  
*Mass. Mon. Thel.* 167. *Sacc. Syll.* 7253. = *S. Baileyanum*,  
*Berk. & Br.*

Gregarious, infundibuliform, stem very short; pileus sulcately zoned, velvety, bay brown (2 in. across, 1 in. high), hymenium smooth, plicate, shining, brown; spores ellipsoid,  $7 \times 5 \mu$ .

On wood, etc. Queensland. N.S. Wales.

**1000. *Stereum crucibuliforme*.** *Massee Mon. Thel.* 168.  
= *S. cyathiforme*, *Currey. Sacc. Syll.* 7255.

Crucible-shaped, externally hairy, margin inflexed (resembling *Crucibulum vulgare*), hymenium even, pale umber at the margin, reddish brown about the base; spores ellipsoid,  $7 \times 4 \mu$ .

On wood. Victoria.

II. *Pileus spathulate, flabelliform, attenuated at the base, with a more or less distinct stem.*

**1001. *Stereum radiato-fissum*.** *B. & Br. Trans. Linn. Soc.*  
2, Vol. II., 63, t. xiv., f. 8-11. *Mass. Mon. Thel. p.* 168.  
*Sacc. Syll.* vi., 7282.

Pilei thin, flabelliform, multifid, subinvolute or divided to the base (1-2 c.m.), bay brown, shining, many zoned, torn at the apex, hymenium ochraceous, spores globose,  $4 \mu$  diam.

On dead wood. Queensland.

**1001 bis. *Stereum decolorans*.** *B. & C. Cooke & Mass.*  
= *Thelephora decolorans*. *B. & C. Linn. Journ.* x., 328.  
*Sacc. Syll.* 7109.

White, ochraceous when dry, pileus wine-glass shaped or fan-like, zoned, striate in lines (2-2 $\frac{1}{2}$  c.m. diam.), occasionally fimbriate, stem tomentose, sometimes nearly obsolete, hymenium smooth.

On trunks.

No specimen found from Australia.

**1002. *Stereum spathulatum*.** *Berk. Hook. Journ.* viii., 274.  
*Mass. Mon. Thel.* 171. *Sacc. Syll.* 7257.

Pileus spathulate, hispid behind, becoming smooth in front, and delicately lineate ( $\frac{3}{4}$  in. long,  $\frac{2}{3}$  in. broad), stem yellow, velvety, lateral ( $\frac{1}{2}$ - $\frac{3}{4}$  in. long), confluent with the pileus; hymenium pallid, with one or two darker zones, spores globose, 5-6  $\mu$  diam.

On wood. Queensland.

**1003. *Stereum versicolor.*** *Fries Epicr.* 547. *Sacc. Syll.* 7276.

Effuso-reflexed, rigid, zoned, subtomentose, brownish, quite smooth and whitish beneath.

On trunks. Victoria.

**1004. *Stereum vellereum.*** *Berk. Fl. N. Zeal.* 183. *Mass. Mon. Thel. p.* 173. *Sacc. Syll.* 7367.

Resupinate, ambient, margin at length broadly free, and lobed, upwards tomy strigose, zoned about the margin (1-2 in. across), hymenium ochraceous, even; spores subglobose, 4-5  $\mu$  diam.

On branches. Victoria. N. Zealand.

**1005. *Stereum pusillum.*** *Berk. Ann. Nat. Hist. x.*, 381. *Mass. Mon. Thel.* 174. *Sacc. Syll.* 7263.

Cartilaginous-coriaceous; pileus flabellate, shining, rufous umber, without zones, silky striate, smooth ( $\frac{2}{3}$  in. high), margin acute, thin, lobed; stem short, sublateral, erect; hymenium pallid, even, smooth, spores subglobose, 3-4  $\mu$  diam.

On wood. Tasmania. (Fig. 80).

**1006. *Stereum striatum.*** *Fries Hym. Eur.* 641. *Mass. Mon. Thel.* 174. *Sacc. Syll.* 7295.

Coriaceous; pileus effused reflexed, undulate, rugose-striate, subtomentose, ferruginous brown, filamentose within and paler (2-5 c.m. broad), hymenium cinereous whitish, even, spores subglobose, 5-6  $\mu$  diam.

On wood. N.S.Wales.

**1007. *Stereum Leichardtianum.*** *Lev. Massee Mon. Thel.* 175. *Sacc. Syll.* 7267.

Pileus coriaceous, flattened, attenuated behind, zoned, spongy-velvety, tawny; margin thin, entire, inflexed behind, hymenium quite smooth, pale yellow.

On trunks. Queensland.

**1008. *Stereum lobatum.*** *Fries Epicr.* 547. *Sacc. Syll.* 7311. = *S. perlatum*, *Berk.* *S. Boryanum*, *Fries.* *S. luteobadium*, *Fries.* *S. ostrea*, *Nees.*

Umbonate, sessile, coriaceous; pileus rigid, tomentose, zoned, zones and smooth margin variable in colour (3-5 in. across), hymenium even, smooth; spores subglobose, 5-6  $\mu$  diam.

On trunks. Victoria. N.S.Wales. Queensland. Tasmania. N. Zealand. New Guinea.

**1009. *Stereum involutum.*** *Klotsch Linn.* VII., 499. *Mass. Mon. Thel.* 176. *Sacc. Syll.* 7272.

Coriaceous; pilei caespitose, imbricate, grown together, ear-shaped, longitudinally striate, rugose, without zones, attenuated at the base into the lateral black stem (1-2 in. long, 1 in. broad), hymenium even, naked, purple violet; spores globose, 4  $\mu$  diam.

On trunks. Queensland. New Guinea.

**1010. *Stereum semilugens.*** *Kalch. Grer. ix., 1. Sacc. Syll. 7278.*

Membranaceous, subcaespitose, sessile, laterally confluent; pilei flattened, semi-orbicular, margin frequently lobed, roughly tomentose or at length becoming smooth, zoned, ferruginous, then umber, hymenium even, smooth, grey, dark cinereous when old, finely cracked.

On trunks. Queensland.

III. *Pileus dimidiate, sessile, or at first resupinate, then effused and reflexed, marginate.*

**1011. *Stereum fascistum.*** *Fr. Epicr. 516. Mass. Mon. Thel. 180. Sacc. Syll. 7271.*

Coriaceous, pilei caespitose, plane, villose, grey cinereous, zoned with shining bay brown bands, base attenuated, and substipitate (4-6 c.m.), hymenium even, smooth, brick red, pallid, spores subglobose,  $5 \times 6 \mu$ .

On trunks. Victoria. Queensland.

**1012. *Stereum gausapatum.*** *Fr. Hym. Eur. 638. Mass. Mon. Thel. 180. Sacc. Syll. 7270.*

Caespitose, connate, sessile, pilei soft, corky, shell shaped, fibrously strigose, tawny, growing pale (2 c.m. or confluent), margin of the same colour, entire, undulate plicate; hymenium radiately rugose, smooth, darker; spores cylindrically ellipsoid,  $10 \times 5 \mu$ .

On trunks. Queensland.

**1013. *Stereum complicatum.*** *Fr. Epic. 548. Linn. Trans. II., t. 14, f. 12-14. Mass. Mon. Thel. 178. Sacc. Syll. 7371.*

Resupinate, free, pendulous, papery; pileus striate, tawny tan-colour, margin crispate, lobed, inflexed (2 c.m. or connate). Hymenium even, smooth, pallid; spores cylindrically ellipsoid, obtuse at each end,  $7-10 \times 4 \mu$ .

On branches. Victoria. Queensland.

**1014. *Stereum hirsutum.*** *Fries Hym. Eur. 639. Mass. Mon. Thel. 181. Sacc. Syll. 7288.*

Coriaceous, rigid; pileus effused and reflexed, strigose, hairy, somewhat zoned, growing pale (3-5 c.m. connate); margin rather obtuse, yellow; hymenium even, smooth, naked, without juice, yellowish, pinkish, etc. Spores globose,  $5 \mu$  diam.

On trunks and branches. Victoria. N.S.Wales. Queensland. W. Australia. S. Australia. Tasmania.

**1015. *Stereum illudens.*** *Berk. Hook. Journ. iv., 59. Mass. Mon. Thel. 181. Sacc. Syll. 7329.=S. decipiens, Berk.*

Coriaceous, rather rigid; pileus effused and reflexed, zoned, radiately plicate, hairy, bay-brown ( $2\frac{1}{2}$  c.m. long); hymenium even, smooth, horny, rufous; spores ellipsoid,  $6-7 \times 4 \mu$ .

On branches, etc. Victoria. N.S.Wales. Queensland. W. Australia. S. Australia. N. Australia. Tasmania.

- 1016. *Stereum lugubris*.** *Cooke Grev. XII., p. 85. Mass. Mon. Thel. p. 182. Sacc. Syll. 7344.*

Coriaceous, rigid; pileus effused and reflexed (about 1 in. deep), tomentose, zoned, cinereous, becoming pallid, zones darker; margin rather acute, pallid; hymenium somewhat papillose, smooth, naked, black.

On logs. New Zealand.

- 1017. *Stereum ochroleucum*.** *Fries Hym. Eur. 639. Mass. Mon. Thel. 184. Sacc. Syll. 7283.*

Pileus coriaceous, rather thick, free, expanded, flaccid, silky, zoned, hoary (1-2 c.m. or connate); hymenium even, smooth, becoming yellowish, cracked when dry; spores ellipsoid or subglobose,  $8 \times 6-7 \mu$ .

On bark. Queensland. Tasmania.

- 1018. *Stereum purpureum*.** *Pers. Ob. Myc. II., 92. Mass. Mon. Thel. p. 186. Sacc. Syll. 7284.*

Coriaceous, soft; pileus effused and reflexed, rather imbricate, zoned, villose-tomentose, pallid or whitish (2 c.m. or connate); hymenium naked, even, smooth, becoming purple; spores ellipsoid,  $7-8 \times 4 \mu$ .

On trunks, branches, etc. Victoria. W. Australia. S. Australia. N.S. Wales. Tasmania.

- 1019. *Stereum retirugum*.** *Cooke Proc. R. Soc. Edin. 1882, 456. Mass. Mon. Thel. 186. Sacc. Syll. 7388.*

Coriaceous, membranaceous, mouse-coloured; pileus effused, cup-shaped, then flattened, confluent, marginate; margin pallid, fimbriate, nearly free ( $2\frac{1}{2}$  c.m. long); hymenium somewhat velvety, reticulately veined, mouse-coloured; spores subglobose,  $8 \times 7 \mu$ .

On wood.

- 1020. *Stereum radicale*.** *Berk. Massee Mon. Thel. p. 187. = Corticium radicale, Berk. Hook. Journ. 1845, 59. Sacc. Syll. 7520.*

Pileus rather thick, white within, reflexed, plane, strigose, whitish-tawny ( $\frac{3}{4}$  in. long,  $1\frac{3}{4}$  in. broad); hymenium smooth, cracked, pale tawny, at length brown; margin sterile, tomentose; spores ellipsoid,  $7 \times 5 \mu$ .

Base of living shrubs. W. Australia.

- 1021. *Stereum simulans*.** *B. & Br. Linn. Trans. II., 64, t. 13, f. 5-15. Mass. Mon. Thel. 189. Sacc. Syll. 7340.*

Pileus orbicular, rigid, rugose, tomentose; margin reflexed; hymenium becoming smooth, pale ochraceous, substance rhubarb-colour.

On branches. Queensland.

- 1022. *Stereum spadiceum*.** *Fries Hym. Eur. 640. Mass. Mon. Thel. 190. Sacc. Syll. 7289.*

Coriaceous, pilei effuso-reflexed, villose, subferruginous; margin rather obtuse, white (2 c.m. or confluent); hymenium smooth,

brownish, when growing turning red if bruised; spores ellipsoid,  $8 \times 5 \mu$ .

On trunks. Victoria. N.S.Wales. Queensland. Tasmania.

**1023. *Stereum rugosum*.** *Fr. Hym. Eur.* 643. *Mass. Mon. Thel.* 191. *Sacc. Syll.* 7336.

Suberous, rigid; pileus effused and shortly reflexed, obtusely marginate, at length smooth, bay-brown (often several inches); hymenium unpolished, pruinose, rather red when bruised; spores cylindrically ellipsoid, obtuse at the ends,  $10-12 \times 4-5 \mu$ .

On trunks. N.S.Wales. W. Australia.

**1024. *Stereum sulphuratum*.** *B. & Rav. Linn. Journ.* x., 331. *Mass. Mon. Thel.* 192. *Sacc. Syll.* 7300.

Pileus reflexed, lobate, crispate, sulphur-coloured, hispid, rather spongy (1-3 or connate); hymenium pallid, undulate; spores ellipsoid,  $5 \times 3 \mu$ .

On dead wood and branches. Victoria.

**1025. *Stereum vorticosum*.** *Fr. Hym. Eur.* 639. *Mass. Mon. Thel.* 194. *Sacc. Syll.* 7286.

Pileus coriaceous, effused, reflexed, obscurely zoned, strigose, hairy, pallid; margin of the same colour (2-4 c.m.); hymenium somewhat ribbed, smooth, turning purplish; spores ellipsoid,  $7 \times 4 \mu$ .

On bark and wood. Queensland.

**1026. *Stereum versiforme*.** *B. & C. N. A. Fungi* 242. *Mass. Mon. p.* 193.

Bright brown, rather thick, at first orbicular and pezizæform; margin thin, elevated, tomentose; hymenium brown, here and there papillate; spores elliptic,  $7 \times 5 \mu$ .

On dead branches, etc. Victoria.

**1027. *Stereum amœnum*.** *Lev. Massee Mon. Thel.* 193. *Sacc. Syll.* 7375.

Gregarious; pileus coriaceous membranaceous, resupinate, oblong-ovate, zoned, hirsute, white; margin free, thin; hymenium even, flesh-colour, then purplish, substance floccose, of the same colour.

On fallen branches. Australia.

**1028. *Stereum molle*.** *Lev. Ann. Sci. Nat.* 1846, 147. *Sacc. Syll.* 7360.

Pileus coriaceous, suborbicular, sessile, spongy velvety, zoned, pallid brown ( $2\frac{1}{2}$  c.m. broad); hymenium even, purplish.

On trunks. Queensland.

IV. *Adglutinate, effused, margin not, or scarcely, free.*

**1029. *Stereum acerinum*.** *Fries Hym. Eur.* 645. *Mass. Mon. Thel.* 202. *Sacc. Syll.* 7418.

Crustaceous, adnate, even, smooth, white; spores ellipsoid,  $6 \times 3-4 \mu$ .

On bark. Victoria. Tasmania.

- 1030. *Stereum sulfureum*.** *Fr. Fun. Mex.* = *S. citrinum*. *B. & Rav. Fun. Car.* III., 128.

Resupinate, suborbicular, irregular, or confluent, closely adnate, rather thick, convex, smooth, pulverulent, lemon-yellow (1 c.m. or more); spores  $10 \times 5 \mu$ .

On trunks. Queensland.

- 1031. *Stereum strumosum*.** *Fries Nov. Symb.* 111. *Mass. Mon. Thel.* 203. *Sacc. Syll.* 7410. = *S. sulphureum*. *Fries.*

Resupinate, adnate, ochraceous or lemon-yellow, at first tuberculiform, immarginate, then dilated, confluent, indeterminate; hymenium even, pulverulent; spores cylindrically ellipsoid, scarcely curved,  $6 \times 3 \mu$ .

On wood.

- 1032. *Stereum sparsum*.** *Berk. Linn. Journ.* XIII., 168. *Mass. Mon. Thel.* 203. *Sacc. Syll.* 7387.

White or pale ochraceous, disposed in hard, now and then confluent, pustules.

On bark. Wangaratta.

#### GENUS 52. **HYMENOCHÆTE.** *Lev.*

Pileus coriaceous, membranaceous, variable in form. Hymenium furnished with minute, rigid, persistent setæ. Basidia tetrasporous. Spores white or olive.

#### I. STIPITATÆ. *Having a definite stem.*

#### II. APODES. *Sessile. Spores white, setæ acuminate.*

- 1033. *Hymenochæte rubiginosa*.** *Lec. Ann. Sci. Nat. Ser.* 3, v., 121. *Cooke Grev.* VIII., 145. *Sacc. Syll.* 7427.

Coriaceous, rigid; pileus effused, reflexed, somewhat imbricate, velvety, reddish-brown, then becoming smooth, bay-brown, intermediate stratum tawny-ferruginous; hymenium ferruginous; setæ acutely conical, or rather obtusely cylindrical,  $80-100 \times 5-8 \mu$ ; spores ellipsoid,  $5 \times 3 \mu$ .

On hard wood, posts, etc. W. Australia. Tasmania.

- 1034. *Hymenochæte phæa*.** *Berk. Fl. N. Zeal.* II., 183. *Mass. Mon. Thel.* 98. *Sacc. Syll.* 7411.

Pileus dimidiate, sessile, thin, coriaceous, flexible, zoned, shortly hairy, somewhat velvety, bay-brown; hymenium as well as the pileus sulcate, setulose, ferruginous; setæ scattered, conical-acuminate,  $30-60 \times 6-7 \mu$ ; spores subglobose,  $4 \times 3 \mu$ .

On bark and wood. Victoria. N.S.Wales. Queensland. (Fig. 81).

- 1035. *Hymenochæte cacao*.** *Berk. Linn. Trans. Ser. 2, Vol.* 1, t. 46, f. 1-3. *Mass. Mon. Thel.* 100. *Sacc. Syll.* 7438.

Dark brown; pilei imbricate, connate, flabelliform, plicate, zoned, strigose (3 in. or more across); hymenium of the same colour, delicately setulose; setæ cylindrical acuminate,  $30-40 \times 5-6 \mu$ ; spores ellipsoid,  $7 \times 4 \mu$ .

On dead wood. Queensland.

- 1036. *Hymenochæte strigosa*.** *B. & Br. Linn. Journ.* xiv., 68. *Mass. Mon. Thel.* 102. *Sacc. Syll.* 7436.

Dimidiate, decurrent behind, thin, lobed, zoned, bay-brown, tinged with purple, strigose (1-3 in. across); hymenium umber; setæ acuminate,  $30-40 \times 6-8 \mu$ ; spores ellipsoid,  $5 \times 3 \mu$ .

On dead wood.

- 1037. *Hymenochæte spadicea*.** *B. & Br. Linn. Journ.* xiv., 68. *Mass. Mon. Thel.* 102. *Sacc. Syll.* 7444.

Pileus thin, elastic when dry, dimidiate or orbicular, affixed behind, zoned, strigose, ferruginous, then bay-brown (4 c.m. broad); hymenium velvety, lineate, rugose, pallid umber; setæ acuminate,  $30-40 \times 5-6 \mu$ ; spores oblong-ellipsoid,  $5 \times 2 \mu$ .

On dead wood.

- 1038. *Hymenochæte tenuissima*.** *Berk. Linn. Journ.* xiv., 67. *Mass. Mon. Thel.* 102. *Sacc. Syll.* 7443.

Pileus umbonate, sessile, very thin, dilated, rubiginous tawny, zoned, fasciculately villose (1 in. or more long); hymenium unequal, rubiginous-yellow; setæ acuminate,  $40-60 \times 10 \mu$ ; spores ellipsoid,  $5-6 \times 3 \mu$ .

On wood. Queensland.

### III. RESUPINATÆ. *Spores white, setæ acuminate.*

- 1039. *Hymenochæte tasmanica*.** *Massee Mon. Thel.* 105, t. 5, f. 2.

Very broadly effused, crustaceous, adnate, rather thick; margin thinner, paler, at length slightly free (4-7 c.m. broad); hymenium rugose, tuberculose, velvety, ferruginous, margin paler; setæ very long, subcylindrical or inflated at the base,  $100-200 \times 8-10 \mu$ . Spores subcylindrical, obtuse,  $7 \times 3 \mu$ .

On wood. Victoria. N. Zealand.

- 1040. *Hymenochæte innata*.** *Cke. & Mass. Grev.* xv., 99. *Mass. Mon. Thel.* 109. *Sacc. Syll.* 7473.

Resupinate, thin, innate, externally fawn colour, internally brick red; margin indeterminate; setæ few, slender,  $15-20 \times 2-3 \mu$ . Spores globose,  $4 \mu$ .

On wood. Queensland.

† *Spores olive.*

- 1041. *Hymenochæte Mougeotii*.** *Fries. Massee Mon. Thel.* III., t. v., f. 6. *Sacc. Syll.* 7449.

Broadly effused, dry, determinate, adnate, dark blood-red; hymenium incrusting, unequal, cracking when dry, pruinose (3 c.m. and more); setæ scattered, conical,  $30-60 \times 5-6 \mu$ . Spores fusoid, elliptic, olive,  $6-7 \times 3\frac{1}{2} \mu$ .

On trunks. Victoria. Tantawanglo. Tasmania.

- 1042. *Hymenochæte tabacina*.** *Lev. Cooke Grev.* VIII., 145. *Mass. Mon. Thel.* 112. *Sacc. Syll.* 7428.

Somewhat coriaceous, thin, flaccid; pileus effused, reflexed, silky, at length smooth, rather ferruginous, margin and inter-

mediate stratum filamentose, golden yellow; hymenium paler, pubescent with setæ, which are conical acuminate,  $80-130 \times 10-14 \mu$ ; spores ellipsoid, olive,  $5-6 \times 3 \mu$ .

On trunks, etc. N.S.Wales. Victoria.

**1043. *Hymenochæte rhabarbarina*.** Berk. Cooke Grev. VIII., 148. Mass. Mon. Thel. 113. Sacc. Syll. 7467.=

*Corticium rhabarbarinum*. Berk. & Br. Linn. Journ. xiv., 69.

Effused, closely adnate, hymenium velvety, rhubarb colour; margin narrow, pallid, evanescent; setæ acuminate,  $30-40 \times 7-9 \mu$ ; spores pale olive, oblong ellipsoid,  $8 \times 4 \mu$ .

On dead wood. Queensland. N. Zealand.

†† *Setæ subclavate, sometimes rough.*

**1044. *Hymenochæte crassa*.** Berk. Cooke Grev. VIII., 148. Mass. Mon. Thel. 114. Sacc. Syll. 7461.

Pileus resupinate, coriaceous, tomentose, velvety, pallid rufous, margin thick, at length free; hymenium unequal, velvety, of the same colour; setæ conical or subclavate, sometimes rough,  $70-130 \times 7-14 \mu$ ; spores cylindrically ellipsoid,  $7-8 \times 4 \mu$ .

On trunks. N.S.Wales.

**1045. *Hymenochæte Schomburgkii*.** Berk. Massee Mon. Thel. 115.=*Stereum Schomburgkii*. Berk. Austr. Fungi 134. Sacc. Syll. 7312.

Resupinate, then reflexed, suborbicular, at length shell-shaped, umber, somewhat zoned in front, velvety (about 1 in.); hymenium even, of the same colour; setæ flaccid, pale brown, cylindrical or fusiform,  $50-100 \times 6-7 \mu$ . Spores subglobose,  $4 \times 3 \mu$ .

On wood. Queensland. N. Australia.

**1046. *Hymenochæte purpurea*.** Cke. & Morg. Mass. Mon. Thel. 115. Sacc. Syll. 7462.=*Thelephora purpurea*. Morg. Miami Vall. 198.

Coriaceous, spongy, wholly resupinate, closely adnate; margin byssoid (3-10 c.m. long); hymenium purple, verging on brown, velvety; setæ clavate-fusoid, slightly rough,  $60-150 \times 10-12 \mu$ . Spores ellipsoid,  $7 \times 4 \mu$ .

On wood. Victoria. Norfolk Island.

**1047. *Hymenochæte olivacea*.** Cooke Grev. xiv., p. 11. Mass. Mon. Thel. 116. Sacc. Syll. 7464.

Effused, dark olive, rugose, velvety; margin thinner and paler (2-3 c.m.); setæ cylindrical or subclavate, pallid,  $40-60 \times 8-10 \mu$ . Spores ellipsoid,  $6 \times 4 \mu$ .

On branches. Queensland.

**1048. *Hymenochæte Kalchbrenneri*.** Massee Mon. Thel. p. 116.=*Corticium marinum*. Thum. Myc. Univ. 1504.

Brown, rather thickly membranaceous, broadly effused, loosely adnate to the matrix, margin subdeterminate, repand; hymenium



velvety; setæ cylindrical or subclavate, now and then rough,  $80-90 \times 6-8 \mu$ . Spores ellipsoid,  $7 \times 4-5 \mu$ .

On dead trunk of *Eucalyptus*. Victoria. Queensland.

GENUS 53. **PENIOPHORA.** Cooke.

Resupinate, effused; hymenium setulose, setulæ hyaline, warted, fusiform; spores white, hyaline.

a. *Margin free, more or less reflexed.*

**1049. *Peniophora papyrina.*** Mont. Cooke Grev. VIII., p. 20, pl. 124, f. 9. Sacc. Syll. 7688.

Very thin, between coriaceous and papery, pileus very broadly effused and reflexed, strigosely hairy, cinereous, concentrically sulcate, margin acute, tawny; hymenium umber, becoming purplish, pubescent velvety with the setulæ; cystidia fusoid,  $80 \times 12 \mu$ . Spores subglobose,  $6 \mu$ .

On bark. Queensland. Victoria. (Fig. 82).

**1050. *Peniophora puberula.*** Klot. Cooke. = *Stereum puberulum.* Bres. Pug. 10.

Membranaceous, coriaceous, broadly effused, margin reflexed; pileus ochraceous yellow, fibrillose-tomentose; hymenium lurid whitish, velvety, at length cracked; cystidia fusiform, granulate, stipitate,  $130-160 \times 13-16 \mu$ . Spores hyaline, ellipsoid,  $10-13 \times 7-9 \mu$ .

On wood. Queensland.

**1051. *Peniophora cinerea.*** Fries. Cooke Grev. VIII., 20, t. 123, f. 8. Mass Mon. 148.

Waxy, then cracking, confluent, cinereous or lurid, circumference similar, hymenium delicately velvety, cystidia fusoid ( $30-50 \times 20-25 \mu$ ); spores globose ( $5-7 \mu$  diam.).

On branches. Victoria.

**1052. *Peniophora tephra.*** B. & C. Cooke Grev. VIII., p. 20, t. 123, f. 6. Sacc. Syll. 7695.

Effused, margin pallid rufous, crenate, free, tomentose; hymenium here and there papillate, cinereous gilvous, at length cracked; cystidia fusoid,  $35 \times 15-18 \mu$ ; spores ellipsoid,  $12-14 \times 5 \mu$ .

On bark. S. Australia.

**1053. *Peniophora albo-marginata.*** Schwein. Mass. Mon. Thel. p. 144. Sacc. Syll. 7158.

Very broadly effused and confluent, rarely shortly reflexed, umber, velvety in the centre, margin white, tomentose; cystidia fusoid,  $40-60 \times 15-25 \mu$ ; spores ellipsoid,  $10 \times 5 \mu$ .

On bark and wood. Victoria. N.S. Wales.

**1054. *Peniophora crustosa.*** Cooke Grev. VIII., 56. Sacc. Syll. 7708.

Effused, thick, hard, perennial, hymenium irregularly lobed, pallid, even, velvety; margin a little elevated; cystidia obclavate,  $50-60 \times 10-15 \mu$ ; spores ellipsoid,  $10 \times 3-4 \mu$ .

On bark. New Zealand.

- 1055. *Peniophora vinosa*.** Berk. *Mass. Mon. Thel.* 145.  
Sacc. *Syll.* 7477.

Broadly effused, vinous, circumference paler; hymenium cracked, interstices silky; cystidia fusoid,  $60-80 \times 15-20 \mu$ ; spores ellipsoid,  $10 \times 5 \mu$ .

On wood and bark. W. Australia.

b. *Margin adpressed, often indeterminate.*

- 1056. *Peniophora rosea*.** Pers. *Mass. Mon. Thel.* 146.=  
*Corticium roseum*. Sacc. *Syll.* 7531.

Effused, adnate, rosy, circumference fimbriate, turning white; hymenium delicately velvety, growing pale, at length cracked and corrugated; cystidia fusoid,  $40-60 \times 20-30 \mu$ ; spores oblong-ellipsoid, curved,  $13-15 \times 4-5 \mu$ .

On wood and bark. Tasmania.

- 1057. *Peniophora incarnata*.** Fries. *Mass. Mon. Thel.* 147.  
= *Corticium incarnatum*. Sacc. *Syll.* 7605.

Somewhat waxy, agglutinate, indeterminate, circumference radiating; hymenium persistently bright coloured (reddish, orange), velvety with the short setulae; cystidia fusoid,  $25-30 \times 15-20 \mu$ ; spores oblong-ellipsoid, a little curved, and apiculate at one end,  $20 \times 5-6 \mu$ .

On wood and bark. Queensland. W. Australia.

- 1058. *Peniophora bambusicola*.** B. & Br. *Mass. Mon. Thel.* 148. Sacc. *Syll.* 7712.

Roundish, gilvous, rough, thin, margin rather fimbriate, of the same colour; spores globose, brown, even,  $11 \mu$  diam.

On rotting bamboos. Queensland.

- 1059. *Peniophora carnea*.** Berk. *Cooke Grev.* VIII., 21, t. 124, f. 11. Sacc. *Syll.* 7697.

Broadly effused, indeterminate, ochraceous flesh-colour, circumference fibrillose, white; hymenium cracked; cystidia fusoid,  $30-40 \times 15-20 \mu$ ; spores ellipsoid,  $6 \times 4 \mu$ .

On fir.

- 1060. *Peniophora sparsa*.** B. & Br. *Cooke Grev.* VIII., 21, t. 125, f. 16. Sacc. *Syll.* 7702.

Snowy white, rather orbicular, scattered, immarginate; hymenium setulose; cystidia fusoid,  $40-50 \times 8 \mu$ ; spores oblong-ellipsoid,  $10 \times 5 \mu$ .

On bark. Victoria. Queensland.

#### GENUS 54. **ALEURODISCUS.** Rabh.

Waxy, coriaceous, at first cup-shaped, then expanded, with an elevated margin; hymenium smooth, basidia large, clavate, nucleolate, accompanied by nodulose pseudoparaphyses.

- 1061. *Aleurodiscus amorphus*.** Pers. *Syn.* 165. Rabh.=  
*Corticium amorphum*. Fries *Hym. Eur.* 648. Sacc. *Syll.* 7506.

Waxy, tough, rather leathery, cup-shaped, then expanded, con-

fluent, marginate, externally white, tomentose (4-6 m.m.); hymenium even, continuous, growing pallid; spores globose-ellipsoid, nucleate, hyaline,  $26 \times 23 \mu$ , rough when mature, on elongated clavate asciform basidia, filled with brown corpuscles.

On fir trunks and branches. Queensland.

**1062. Aleurodiscus albidus.** *Mass. Grev. xvii., 55.*

At first cup-shaped, white, margin erect, tomentose, inflexed, then expanded and flattened, and often confluent (2-3 lines diam., or confluent,  $\frac{1}{2}$ - $\frac{3}{4}$  in.); hymenium white, rather powdery, here and there cracking when dry; spores ellipsoid,  $10-12 \times 9 \mu$ .

On branches. Queensland. (Fig. 83).

**1063. Aleurodiscus tabacinus.** *Cooke Grev. 1885, p. 11. Sacc. Syll. 7510.*

Erumpent, cup-shaped, gregarious, pileus rather elliptical (2-3 m.m.), rugose, crispate, brown, tomentose; margin rather thick, paler, connivent, hairs straight, rather rigid ( $100 \mu$  long); basidia clavate-cylindrical, guttulate; spores elliptic, continuous, granular ( $25-28 \times 10 \mu$ ).

On wood. Victoria. N.S. Wales.

GENUS 55. **CORTICIUM.** *Fries.*

Hymenium covering the whole free surface, even or tuberculose, waxy, smooth, arising immediately from the mycelium, without an intermediate stratum. Spores hyaline.

a. *Margin free, determinate, marginate.*

b. *Immarginate, margin and substratum byssoid or strigose.*

**1064. Corticium calceum.** *Fr. Hym. Eur. 652. Mass. Mon. Thel. 127. Sacc. Syll. 7596 (including Cort. cretaceum, Pers.)*

Broadly effused, adglutinate, waxy, smooth, white, margin similar; hymenium even, cracking when dry, pallid; spores cylindrically ellipsoid,  $8 \times 4 \mu$ .

On wood and branches. Tasmania.

**1065. Corticium sebaceum.** *Pers. Mass. Mon. Thel. 127. =Thelephora sebacea. Pers. Syn. 577. Sacc. Syll. 7162. =Sebacinia incrustans. Tul. Ann. Sci. Nat. 1872.*

Effused, fleshy or waxy, becoming hard, incrusting and variable in form, tuberculose, stalactitic, whitish, margin similar (5-8 c.m. broad); hymenium collapsing, flocculose, pruinose. Spores ovate, kidney-shaped, granulose, hyaline,  $10-12 \times 6-7 \mu$ .

On the ground and stems of plants. Tasmania.

**1066. Corticium simulans.** *Berk. & Br. Linn. Journ. xiv., 72. Mass. Mon. Thel. 128. Sacc. Syll. 7593.*

Soft, fulvous, springing from a white, membranaceous, floccose mycelium; hymenium smooth; spores oblong-ellipsoid,  $8 \times 4 \mu$ .

Running over moss and twigs. Victoria.

- 1067. *Corticium lacteum*.** *Fr. Hym. Eur.* 649. *Mass. Mon. Thel.* 132. *Sacc. Syll.* 7527.

Broadly effused, submembranaceous, milk-white, beneath and margin loosely fibrillose; hymenium waxy, when dry cracking and parted, pale ochraceous; spores subglobose, 5-6  $\mu$  diam.

On wood. Victoria.

- 1068. *Corticium Auberianum*.** *Mont. Crypt. Cuba* 372. *Mass. Mon. Thel.* 135. *Sacc. Syll.* 7552.

Adnate, at first orbicular, wholly floccosely mealy, snow white, at length thinly submembranaceous, confluent effused; margin persistently floccose; hymenium whitish, soon verging on yellowish or grey; spores ellipsoid, 6  $\times$  4  $\mu$ .

On branches. Victoria.

- 1069. *Corticium Archeri*.** *Berk. Fl. Tasm.* 11, 260. *Mass. Mon. Thel.* 135. *Sacc. Syll.* 7668.

Resupinate, pallid rufous, white within, rather thick, cracking, immarginate; spores cylindrically-ellipsoid, 7-8  $\times$  3  $\mu$ .

On charred wood. Queensland. Tasmania.

- 1070. *Corticium arachnoideum*.** *Berk. Ann. Nat. Hist.* 1844, p. 345. *Mass. Mon. Thel.* 135. *Sacc. Syll.* 7528.

Thin, effused, pallid, immarginate, fibrillose or subfloccose beneath, margin fimbriate with white fibrils; hymenium waxy, continuous, dry, here and there cracked; spores globose, 6-7  $\mu$  diam.

On wood, bark, etc. Victoria. S. Australia. Tasmania.

- 1071. *Corticium penetrans*.** *Cooke & Mass. Grec.* xix., 90.

White, effused, incrusting, thick, soft, closely adnate, immarginate; with a profuse, penetrating, floccose mycelium; hymenium continuous, even, smooth, chalky. Spores pip-shaped, 9  $\times$  7  $\mu$ .

On rotten wood, etc. Victoria.

- 1072. *Corticium læve*.** *Fries Hym. Eur.* 649. *Sacc. Syll.* 7530.

Effused, membranaceous, separating from the matrix, substratum villose; margin byssoid (not fibrillosely radiate); hymenium even, smooth, somewhat flesh-coloured or livid; spores ellipsoid, 7  $\times$  5  $\mu$ .

On wood, bark, etc. Victoria. Queensland. Tasmania.

- 1073. *Corticium nudum*.** *Fries Hym. Eur.* 655. *Sacc. Syll.* 7609.

Waxy, adglutinate, cracking, flesh-colour, then pale; margin determinate, smooth, hymenium even, cracking when dry, clad with a fugacious white meal; spores ellipsoid, 8  $\times$  5  $\mu$ .

On bark of *Citrus*. Queensland.

\* *Hymenium brightly coloured.*

- 1074. *Corticium cinnabarinum*.** *Mass. Mon. Thel.* 140.

Broadly effused, adglutinate, immarginate; hymenium continuous, even, waxy, vermilion red; spores subglobose, 5-6  $\mu$  diam.

On wood. N.S. Wales.

- 1075. *Corticium miniatum*.** *Cooke Grev. xi., 2. Mass. Mon. Thel. 140. Sacc. Syll. 7676.*

Effused, adnate, vermilion, margin fimbriate, whitish; hymenium rather powdery, falling away, umber beneath; spores globose, hyaline,  $5-6\ \mu$  diam.

On bark. N.S. Wales. Queensland.

- 1076. *Corticium anthrochroum*.** *Fr. Hym. Eur. 661. Mass. Mon. Thel. 141. Sacc. Syll. 7786.*

Broadly effused, membranaceous, brick red or rosy, growing pale; margin byssoid, paler; spores ellipsoid,  $11-13 \times 8-9\ \mu$ .

On bark. Queensland.

- 1077. *Corticium sulphurellum*.** *Cke. & Mass. Grev. xx. 35.*

Broadly effused, usually forming a very thin, pulverulent, bright sulphur-yellow stratum; when perfectly evolved the hymenium is waxy and polished; spores obliquely pip-shaped,  $7 \times 4\ \mu$ .

On dead branches. Victoria. (Fig. 84).

- 1078. *Corticium cœruleum*.** *Fries Hym. Eur. 651. Mass. Mon. Thel. 151. Sacc. Syll. 7539.*

Broadly effused, adnate, tomentose, bright blue; margin byssoid, of the same colour, becoming whitish; hymenium waxy, soft, growing pale when dry. Spores ellipsoid,  $8 \times 4\ \mu$ .

On wood, branches, etc. N.S. Wales. Queensland.

- 1079. *Corticium atrovirens*.** *Fries Hym. Eur. 651. Mass. Mon. Thel. 155. Sacc. Syll. 7540.*

Irregularly effused, thin, dark-green; margin and substratum of the same colour, hymenium waxy, smooth, pruinose with white. Spores subglobose,  $4-5\ \mu$  diam.

On rotten wood, sticks, etc. Queensland.

c. AMPHIGENA. *Very thin, innate, decorticating.*

- 1080. *Corticium comedens*.** *Fries Hym. Eur. 656. Mass. Mon. Thel. 155. Sacc. Syll. 7616.*

Effused, innate, developed beneath the bark; by falling away of the epidermis naked, lilac, then pallid; hymenium even, smooth, cracking when dry. Spores cylindrically ellipsoid, sometimes curved,  $14-16 \times 6-7\ \mu$ .

On branches. W. Australia.

#### GENUS 56. **CONIOPHORA.** *DCand.*

Resupinate, effused; hymenium even, pulverulent. Spores coloured.

##### a. *Macrosporæ.*

- 1081. *Coniophora viridis*.** *Berk. Cooke Grev. viii., 89.*

Effused, immarginate, softly tomentose, greenish; hymenium granulated. Spores subglobose or ellipsoid, apiculate at each end, dark brown,  $25-30 \times 17-20\ \mu$ .

On dead wood. New Zealand.

**1082. *Coniophora olivacea*. Fries. Cooke Grev. VIII., 89.**

Membranaceous, adnate, circumference fimbriate, growing whitish; hymenium thin, dark olive, pulverulent, tomentose. Spores ellipsoid, ochre,  $14-17 \times 10-12 \mu$ .

On decayed pine.

**1083. *Coniophora membranacea*. Cooke Grev. VIII., 89. Mass. Mon. p. 137. Sow. t. 214.**

Somewhat orbicular or effused, submembranaceous (10 c.m. or more), fragile, circumference fibrillose, yellowish; hymenium dingy ferruginous, powdery. Spores elliptic, yellow-brown,  $10-12 \times 5-6 \mu$ .

On walls, etc. Victoria.

**1084. *Coniophora luteo-cincta*. Berk. Cooke Grev. VIII., 89.**

Effused; hymenium brown, pulverulent, circumference byssoid, yellow. Spores ellipsoid, yellow olive,  $15-18 \times 6-8 \mu$ .

On the ground, and on bark. Victoria. Wangaratta. (Fig. 85).

**1085. *Coniophora sulphurea*. Fries. Mass. Mon. Thel. 133.**

Effused, fibrillose, byssoid, bright sulphur colour; hymenium (when perfect) thick, tawny, waxy and soft, cracking when dry. Spores ellipsoid or subglobose, yellow brown,  $12 \times 9 \mu$ .

On bark, etc. Tasmania.

**1086. *Coniophora murina*. B. & Br. Mass. Mon. Thel. 138.**

=*Corticium murinum*. B. & Br. Linn. Journ. XIV., 70.

Broadly effused, at length frustulose, immarginate, mouse-coloured; hymenium delicately pruinose, becoming ferruginous. Spores ellipsoid, ochraceous-white,  $10 \times 5 \mu$ .

On branches, etc. Victoria.

**GENUS 57. *CYPHELLA*. Fries.**

Submembranaceous, cup-shaped, rarely plane, adnate behind, commonly stipitate, erect or pendulous; hymenium concave or discoid. Spores continuous, hyaline.

**1087. *Cyphella albobolascens*. A. & S. Sacc. Syll. 7817.**

=*Cyphella Curreyi*. B. & Br. Ann. Nat. Hist. No. 935.

Sessile or subsessile, nearly spheroid, then hemispherical, white, villose (1.5 m.m.), hymenium even, pallid, or pallid violet; spores ovoid-spheroid, unequal-sided,  $11-16 \times 9-12 \mu$ .

On bark and wood. Victoria.

**1088. *Cyphella capula*. Fr. Hym. Eur. 664. Sacc. Syll. 7856.**

Membranaceous, obliquely campanulate, running down into an oblique stem, smooth, whitish, margin sinuate and deformed (2.4 m.m.), hymenium even; spores ovate,  $8-4 \mu$ , hyaline, on clavulate basidia.

On herb stems. Queensland. Tasmania.

- 1089. *Cyphella villosa*.** *Pers. Sacc. Syll.* 7868.=*Peziza villosa*. *Pers. Syn.* 655.

Sessile, dry, sphaeroid, white, covered with a snow-white, persistent, villose down, open when moist (1-2 m.m. diam.); hymenium even; spores ovate, oblong, hyaline, 7-4  $\mu$ , on fusoid basidia.

On herb stems. Queensland. (Fig. 86a).

- 1090. *Cyphella polycephala*.** *Sacc. Hedw.* 1889, 126.

Gregarious; pilei 4-6 (rarely 2-3), closely joined in a common base, whitish-brown, smooth, urn-shaped, for some time closed, villose white (1 m.m. thick and high); hairs filiform, minutely rough above, 5  $\mu$  thick; spores?

On herb stems. N.S.Wales.

- 1091. *Cyphella australiensis*.** *Cooke Grev. xx.*, 9.

Gregarious, cup-shaped, sessile (1-1½ m.m. diam.), pallid, clad with closely pressed silky hairs; margin connivent, disc honey-coloured; sporules 4-5  $\times$  3  $\mu$ .

On bark. Victoria.

- 1092. *Cyphella muscigena*.** *Pers. Fr. Hym. Eur.* 663. *Sacc. Syll.* 7889.

Membranaceous, soft, flattened, subdimidiate, white (about 1 m.m.), externally silky under a lens; hymenium rugulose; spores ovoid, hyaline, 8-10  $\times$  5  $\mu$ .

On larger mosses. Victoria. Tasmania.

#### GENUS 58. **CORA.** *Fries.*

Coriaceous, membranaceous, or fibrillose and interwoven; hymenium inferior, rather waxy, cracking; basidia monosporous, clavate, bearing gonidia on the upper stratum, hymenial stratum densely papillate.

Doubtful fungi.

- 1093. *Cora ceruginosa*.** *Nees. Sacc. Syll.* 7912.=*Dichonema æruginosum*. *Nees. Jav. t. 2, f. 1-3*.=*Dictyonema*. *Fr. Orb. Vet.* 303.

Membranaceous, imbricately caespitose, somewhat orbicular, wholly villose, everywhere verdigris green, or blue grey, margin fringed, paler, marginal areolæ irregularly placed, pale yellow.

On trunks. Queensland. (Fig. 136).

#### *Family V.* **CLAVARIEI.** *Corda.*

Hymenium not distinct from the hymenophore, developed on both surfaces. Rather fleshy or coriaceous fungi, vertical, simple or branched.

#### GENUS 59. **SPARASSIS.** *Fr.*

Fleshy fungi, branched, the branches flattened in a leaf-like manner, composed of two laminae, fertile on both sides; basidia tetrasporous; spores continuous, hyaline.

- 1094. *Sparassis crispa*.** *Fr. Hym. Eur.* 666. *Sver. Svamp. t.* 17. *Sacc. Syll.* 7923.

Very much branched, whitish (5-35 c.m. diam.); branches intricate, recurved at the apex, without zones, serrate; spores obovate and angular, 1-2 guttulate, pale ochraceous,  $4-6 \times 3-4 \mu$ .

On wood. Edible. N.S.Wales.

GENUS 60. **CLAVARIA.** *Vaill.*

Fungi fleshy, branched or simple, somewhat tapering, without distinct stem. Hymenium continuous, dry, homogeneous, developed on all sides. Basidia 2-spored or 4-spored, hyaline or ochraceous.

I. RAMARIA. *Branched.*

a. *Leucosporæ.*

- 1095. *Clavaria flava*.** *Schæff. t.* 175. *Fr. Hym. Eur.* 666. *Sverig. Svamp. t.* 26. *Sacc. Syll.* 7929.

Fragile; trunk thick, fleshy, white (8-11 c.m. high), very much branched, branches tapering, even, fastigiate, obtuse, yellow; spores pallid, or yellowish white (hyaline under a lens), ellipsoid,  $8-10 \times 4 \mu$ .

On gravelly ground. Victoria. Queensland. N.S.Wales.

- 1096. *Clavaria botrytes*.** *Pers. Syn.* 587. *Fr. Hym. Eur.* 667. *Sverig. Svamp. t.* 35. *Sacc. Syll.* 7931.

Fragile; trunk very thick, unequal, much branched (8 c.m. high), branches swollen, unequal, rather rugose, red at the tips; spores ellipsoid, hyaline,  $12-15 \times 6 \mu$ .

On the ground. Victoria. Queensland. N.S.Wales. W. Australia. Tasmania.

- 1097. *Clavaria fastigiata*.** *Linn. Suec.* 1269. *Fr. Hym. Eur.* 667. *Sacc. Syll.* 7937.

Rather tough, caespitose, much branched, equal (3-4 c.m. high), branches short, divaricate, branchlets fastigiate; spores sub-sphaeroid, irregular,  $4-6 \mu$  diam.

In pastures. Victoria. N.S.Wales.

- 1098. *Clavaria muscoides*.** *Linn. Suec. No.* 1270. *Fr. Hym. Eur.* 667. *Sacc. Syll.* 7938.

Rather tough, slender, yellow (2 c.m. high), two or three times furcate; stem thin, branches curved, acute. Spores  $6 \mu$  diam.

In pastures. Victoria. N.S.Wales.

\* *Colour white or grey.*

- 1099. *Clavaria coralloides*.** *Linn. Suec.* 1268. *Fr. Hym. Eur.* 668. *Sverig. Svamp. t.* 92, f. 4, 5. *Sacc. Syll.* 7941.

Rather fragile, commonly caespitose, white, hollow within; trunk rather thick, repeatedly and irregularly much branched (11 c.m. high), branches unequal, dilated upwards, branchlets crowded, acute.

In moist woods. Victoria.



- 1100. *Clavaria cinerea*.** *Bull. t.* 354. *Fr. Hym. Eur.* 668. *Sacc. Syll.* 7942.

Fragile, stuffed, becoming cinereous; trunk rather thick, short, much branched (6-8 c.m. high), branches and branchlets incrassated, deformed, rather rugose, and somewhat obtuse; spores irregularly ellipsoid-sphaeroid,  $8-10 \times 5-6 \mu$ .

In woods. Victoria.

- 1101. *Clavaria lurida*.** *Kalch. Proc. Linn. Soc. N.S.W.* 1882, 105.

Cæspitose, very much branched, dingy white; trunks thin, branches and branchlets crowded, elongated, acute, tawny when dry, and rather filiform.

On the ground. Victoria.

- 1102. *Clavaria cristata*.** *Pers. Syn.* 501. *Fr. Hym. Eur.* 668. *Sverig. Svamp. t.* 92, f. 1-3. *Sacc. Syll.* 7944.

Tough, even, stuffed, white (3-7 c.m. high), branches dilated above, acutely incised and cristate. Spores angular or subellipsoid-sphaeroid, hyaline,  $5-7 \times 3-4 \mu$ .

In woods. Victoria. Queensland. Tasmania.

- 1103. *Clavaria rugosa*.** *Bull. t.* 448, f. 2. *Fr. Hym. Eur.* 669. *Sacc. Syll.* 7947.

Tough, simple, or sparingly branched, thickened upwards and rugose, white (8-11 c.m. high), branches deformed, obtuse. Spores angularly sphaeroid,  $8-10 \mu$  diam.

In moist places. Queensland.

- 1104. *Clavaria Krombholzii*.** *Fr. Hym. Eur.* 669. *Sacc. Syll.* 7949.

Fragile, cæspitose, even, white, sparingly branched, branches rather compressed, obtuse (about  $2\frac{1}{2}$  c.m. high). Spores  $11 \times 8 \mu$ .

On the ground. Victoria.

- 1105. *Clavaria Kunzei*.** *Fr. Hym. Eur.* 669. *Sacc. Syll.* 7951.

Rather fragile, white, very much branched from the thin base (2-6 c.m. high), branches elongated, crowded, repeatedly furcate, fastigiate, even, equal, compressed at the axils. Spores subglobose,  $9-12 \times 8 \mu$ , hyaline.

In woods. Queensland.

- 1106. *Clavaria plebeja*.** *Fr. Pl. Preiss.* II., p. 137. *Sacc. Syll.* 7955.

Tough, white, becoming yellowish, trunk rather thick, branches and branchlets very much divided, solid, crowded, multifid and cristate at the apices. Spores hyaline.

In sandy soil. W. Australia.

\*\* Colour whitish or dingy, growing on wood.

- 1107. *Clavaria pyxidata*.** *Pers. Comm. t.* 1, f. 1. *Fr. Hym. Eur.* 669. *Sacc. Syll.* 7957.

Pale tan colour, becoming somewhat reddish (10-13 c.m. high), trunk thin, smooth, branched, branches and branchlets all

excavated, and cup-shaped at the tips ; margin of the cups proliferous, radiating. Spores subglobose,  $4.4 \frac{1}{2} \times 3 \mu$ , hyaline.

On rotten wood. Victoria. N.S.Wales.

b. *Ochrosporæ*.

\* *Colour yellow, cinnamon, etc.*

- 1108. *Clavaria aurea*.** *Schæff. t. 287. Fr. Hym. Eur. 670. Sacc. Syll. 7963.*

Trunk thick, elastic, turning pale, divided into stout, straight, dichotomous, much divided branches, which are tapering, obtuse, subdentate, yellow (8-10 c.m. high). Spores ellipsoid,  $9-12 \times 4-6 \mu$ .

In woods. Queensland. N.S.Wales.

- 1109. *Clavaria formosa*.** *Pers. Ic. et Desc. t. 3, f. 5. Fr. Hym. Eur. 671. Sacc. Syll. 7967.*

Trunk thick, elastic, whitish, very much branched (12 c.m. high), branches elongated, rosy orange, branchlets obtuse, yellowish. Spores oblong, ochraceous, papillate,  $18 \times 6 \mu$ .

In woods. Victoria. N.S. Wales. (Fig. 86).

- 1110. *Clavaria abietina*.** *Pers. Comm. 46. Fr. Hym. Eur. 671. Sacc. Syll. 7970.*

Ochraceous, very much branched (5-8 c.m. high), trunk whitish, tomentose, rather thick, branches crowded, longitudinally rugose when dry, branchlets straight, acute. Spores subellipsoid,  $7-10 \times 4-6 \mu$ .

In fir woods. Victoria.

- 1111. *Clavaria Kalchbrenneri*.** *Muell. Proc. Linn. Soc. N.S.W. 1882, p. 105, not Sacc. Syll. No. 8019.*

Thin, pale orange yellow, subcaespitose, trunk thin, naked, branches short, acute, dichotomous, or fasciculate.

On the ground. Victoria.

- 1112. *Clavaria crocea*.** *Pers. Ic. et Desc. t. 11, f. 6. Fr. Hym. Eur. 671. Sacc. Syll. 7973.*

Minute, thin, saffron yellow, stem naked, pallid, branches and branchlets subfurcate ( $1-1 \frac{1}{2}$  c.m. high) ; spores ellipsoid,  $6-7 \times 2-3 \mu$ .

In woods. Victoria.

- 1113. *Clavaria grisea*.** *Pers. Comm. 41. Fr. Hym. Eur. 672. Sacc. Syll. 7979.*

Firm; trunk thick, whitish; branches attenuated, subrugose and as well as the branchlets unequal, obtuse, dingy grey (6-8 c.m. high) ; spores elongated,  $10-12 \times 4 \mu$ .

On the ground in woods. Victoria.

\*\* *Growing on trunks.*

- 1114. *Clavaria stricta*.** *Pers. Comm. t. 4, f. 1. Fr. Hym. Eur. 673. Sacc. Syll. 7988.*

Very much branched, pale yellowish, turning brownish when bruised, trunk rather thick; branches and branchlets straight,

even, crowded, adpressed, acute (10 c.m. or more high) ; spores ovate, pale yellow,  $6-8 \times 3\frac{1}{2}-4\frac{1}{2} \mu$ .

On trunks. Queensland. N.S. Wales.

**1115. *Clavaria crispula*.** *Fr. Hym. Eur.* 673. *Sacc. Syll.* 7901.

Very much branched, tan coloured, then ochraceous ; trunk thin, villose and somewhat rooting ; branches flexuous, many times divided, branchlets of the same colour, spreading (3-8 c.m. high), spores pale yellow,  $5 \times 3 \mu$ .

At base of trunks. W. Australia.

c. RAMARIÆ. *Colour of spores unknown.*

† *Terrestres.*

**1116. *Clavaria portentosa*.** *B. & Br. Linn. Trans.* II., 65, t. 14, f. 15. *Sacc. Syll.* 7996.

Whitish ; subcylindrical, rough, repeatedly much branched, apices elongated, subulate, darker upwards, with the tips pallid, the whole mass subclavate (6-7 c.m. high).

Amongst leaves. Queensland.

**1117. *Clavaria lætissima*.** *Pers. in Linn. Journ.* XVIII., p. 386. *Sacc. Syll.* 8008.

Cæspitose, orange, repeatedly dichotomous, compressed ; apices dilated, subdivided, tawny (7 c.m. high).

On the ground. Queensland.

**1118. *Clavaria lorithamnus*.** *Berk. Austr. Fungi No.* 146. *Sacc. Syll.* 8029.

Pallid umber ; branches straight, apices shortly bifid and rather acute (4 c.m. high) ; spores hyaline.

On the ground. Victoria.

**1119. *Clavaria Colensoi*.** *Berk. Fl. N. Zeal.* 186. *Sacc. Syll.* 8039.

Small, branched from the compressed base, branches erect, furcate, nearly equal, acuminate at the tips, fixed to the matrix by short tow-like fibrils (3 c.m. high).

On naked ground. Queensland. New Zealand.

II. SYNCORYNE. *Nearly simple, cæspitose or fasciculate at the base.*

\* *Rubentes.*

**1120. *Clavaria rufa*.** *Fl. Dan. t.* 775, f. 1. *Fr. Hym. Eur.* 674. *Sacc. Syll.* 8062.

Cæspitose, rufous ; clubs stuffed, thickened, sometimes bifid, acute (4 c.m. long).

Amongst grass. Queensland.

- 1121. *Clavaria rosea*.** *Fr. Hym Eur.* 674. *Sacc. Syll.* 8063.

Rather fasciculate, fragile, rosy; clubs stuffed, at length yellowish at the tips, attenuated downwards and whitish (3-4 c.m. high); spores  $2\ \mu$  diam.

On ground. Victoria.

var.  $\beta$ . ***attenuata*.**

Clubs attenuated at the apex.

Amongst moss.

- 1122. *Clavaria fusiformis*.** *Sow. t.* 334. *Fr. Hym. Eur.* 674. *Sacc. Syll.* 8067.

Cæspitose and connate, rather firm, yellow, soon hollow (10 c.m. high); clubs somewhat fusiform, simple and dentate, even, attenuated into a base of the same colour; spores  $6-8 \times 6\ \mu$ .

Amongst grass. Queensland.

- 1123. *Clavaria inæqualis*.** *Mull. Fl. Dan. t.* 836, f. 1. *Fr. Hym. Eur.* 674. *Sacc. Syll.* 8069.

Gregarious, subfasciculate, fragile, stuffed, yellow (5-7 c.m. high); clubs various, simple or furcate, continuous downwards, of the same colour; spores ellipsoid or irregularly globose, hyaline, uniguttulate,  $10-12 \times 5\frac{1}{2}\ \mu$  (sometimes to  $8\ \mu$ ).

Amongst sand. Victoria. N.S.Wales. Tasmania.

- 1124. *Clavaria argillacea*.** *Fr. Hym. Eur.* 675. *Sacc. Syll.* 8072.

Fasciculate, fragile, clay-coloured, pallid (3-4 c.m. high); clubs simple, variable; stem shining, yellow; spores  $10 \times 6-8\ \mu$ .

On the ground. Victoria. N.S.Wales. Queensland.

- 1125. *Clavaria Archeri*.** *Berk. Fl. Tasm. t.* 188, f. 3. *Sacc. Syll.* 8077.

Fasciculate, short, orange (25 m.m. high), flabellately clavate, rather rugose.

On the ground. Queensland. Tasmania.

- 1126. *Clavaria vermicularis*.** *Scop. Fr. Hym. Eur.* 675. *Sacc. Syll.* 8009.

Cæspitose, fragile, white (8 c.m. high); clubs stuffed, simple, cylindrical, subulate; spores  $8 \times 6\ \mu$ .

Amongst grass. Victoria.

- 1127. *Clavaria fragilis*.** *Holms. 1, p.* 7. *Fr. Hym. Eur.* 675. *Sacc. Syll.* 8080.

Fasciculate, very fragile, yellow above, white below, attenuated, sometimes wholly white; clubs hollow, quite obtuse, variable (3-8 c.m. high); spores ellipsoid,  $10-12 \times 4-5\ \mu$ .

On the ground. Victoria.

III. HOLOCORYNE. *Simple, distinct, and separate at the base.*

- 1128. *Clavaria pistillaris*.** *Linn. Fr. Hym. Eur.* 676. *Sacc. Syll.* 8085.

Simple, large (6-30 c.m. high), fleshy, stuffed, obovately clavate, obtuse, yellow, then reddish; spores ellipsoid,  $10-11 \times 5-6 \mu$ .

Amongst grass. Victoria.

- 1129. *Clavaria juncea*.** *Fr. Hym. Eur.* 677. *Sacc. Syll.* 8093.

Gregarious, thin, filiform, flaccid, fistulose, acute, pallid, then rufescent, with a creeping, fibrillose base (5-10 c.m. high); spores obovate, uniguttulate, hyaline,  $4 \mu$  diam.

Amongst dead leaves. Victoria. Tasmania.

- 1130. *Clavaria paludicola*.** *Lib. Fr. Hym. Eur.* 678. *Sacc. Syll.* 8096.

Small, simple, slightly compressed, rugulose, yellow, orange when dry (10-15 m.m. high); clubs short, obtuse.

In moist places, amongst ferns. S. Australia.

- 1131. *Clavaria aurantia*.** *Cooke & Mass. Grev.* xvi., 33. *Sacc. Syll.* 8108.

Orange, quite simple, straight, thickened upwards into the club, smooth, attenuated downwards into an equal stem (5-8 c.m.); spores subglobose, minute.

On the ground. Victoria. (Fig. 87).

- 1132. *Clavaria rhizomorpha*.** *Berk. Fl. Tasm.* II., t. 183, f. 4. *Sacc. Syll.* 8112.

Erumpent, confluent, nearly simple, chestnut-red (6-12 m.m. high), or with a violet tinge; apices yellowish.

On dead bark. Tasmania.

- 1133. *Clavaria miltina*.** *Berk. Hook. Journ.* 1852, p. 140. *Sacc. Syll.* 8116.

Gregarious, fragile ( $7\frac{1}{2}$  c.m. high); clubs simple, quite acute, crimson.

On rotten wood. Queensland.

- 1134. *Clavaria mucida*.** *Pers. Comm.* t. 2, f. 3. *Fr. Hym. Eur.* 679. *Sacc. Syll.* 8125.

Gregarious, minute, simple or very sparingly branched, even, naked, white, becoming yellowish, smooth (1-2 c.m. high), sometimes rosy; stem rather distinct. Spores  $5-6 \times 2-3 \mu$  or  $6-7 \times 3-4 \mu$ .

On rotten wood. N.S.Wales.

- 1135. *Clavaria tasmanica*.** *Berk. in Herb. Grev.* xx., 10.

Clubs simple, clavate (4 c.m. long), single, or two or three together, fuliginous, base expanded in a white floccose mycelium; stem slender, paler, somewhat flexuous. Spores subglobose,  $8 \mu$  diam.

On tree ferns, wood, etc. Tasmania.

**1136. *Clavaria Muelleri*. Berk. Grev. xx., 10.**

Simple, clavate, white, slender (2-3 c.m. long), attenuated below into a thin cylindrical stem, apex obtuse.

On the ground. Victoria. Queensland.

**GENUS 61. *CALOCERA*. Fries.**

Fungi between gelatinous and cartilaginous, horny when dry, vertical, rather cylindrical, simple or branched, viscid, without distinct stem; hymenium on both sides. Spores oblong, curved.

**\* *Ramosæ*.****1137. *Calocera guepinioides*. Berk. Dec. No. 54. Sacc. Syll. 8154.**

Small, erumpent, variable, red brown (1 c.m. high); stem compressed, palmate above, branches few and quite obtuse.

On rotten wood. Victoria. W. Australia. S. Australia. Queensland. Tasmania.

**1138. *Calocera digitata*. Cke. & Mass. Grev. xvii., 7.**

Branched ( $1-1\frac{1}{2}$  in. high), tough, even, pallid; trunk thin, smooth, twice or three times furcate, branches expanded at the apex in a spatulate manner, each bearing from 3 to 5 delicate scyphoid processes arranged like fingers on the open hand. Spores white, elliptical,  $5-6 \times 3 \mu$ .

On damp logs. Victoria. (Fig. 88).

**\*\* *Cæspitosæ*.****1139. *Calocera cornea*. Fr. Hym. Eur. 680. Sacc. Syll. 8158.**

Cæspitose, rooting, even, viscid, orange-yellow (1 c.m. high), clubs short, subulate, connate at the base. Spores elliptic, sub-navicular, granular, or guttulate, hyaline,  $10-12 \times 1-4 \mu$ .

On rotten wood. Victoria. Queensland.

**\*\* *Simplices*.****1140. *Calocera stricta*. Fr. Hym. Eur. 680. Sacc. Syll. 8163.**

Simple, solitary, elongated, obtuse at the base, linear, yellow, even when dry (1-3 c.m. long). Spores clavate, acute below,  $9-12 \times 4-5 \mu$  hyaline, thinly uniseptate in the middle, but not constricted.

On wood and dead fir leaves. Victoria.

**1141. *Calocera nutans*. Sacc. Hedwigia, 1890, 154.**

Scattered, tapering, clavate, compressed, apex rather obtuse, honey-yellow, curved, smooth (2-3 m.m. high,  $\frac{3}{4}$  m.m. broad), stem very short, but distinct; basidia clavulate, undivided. Spores ellipsoid-oblong, unequal-sided,  $7 \times 3\frac{1}{2} \mu$  hyaline, binucleate, simulating uniseptate.

On trunks. Victoria.

**1142. *Calocera glossoides*. Fr. Hym. Eur. 681. Sacc. Syll. 8165.**

Simple, solitary, somewhat tremelloid, yellow (12 m.m. high), clubs incrassated, obtuse, compressed, stem tapering. Spores ellipsoid, 12  $\mu$  long.

On trunks. Victoria. Tasmania. N. Zealand.

*Family VI. TREMELLINÆ. Fr.*

Homogeneous, gelatinous, collapsing when dry, reviving when moistened.

*Sub-Family 1. Auriculariæ. Bref.*

Basidia elongated or fusoid, transversely many celled.

**GENUS 62. AURICULARIA. Bull.**

Hymenium inferior, distantly and vaguely ribbed and plicate, swollen when moist, and rather tremelloid, collapsing when dry. Spores oblong, hyaline.

**1143. *Auricularia mesenterica*. Fr. Hym. Eur. 646. Sacc. Syll. 8294.**

Pilei resupinate, then reflexed, entire, villose, zoned, brownish cinereous; hymenium ribbed and plicate, violet-brown; spores oblong-reniform, 15-20  $\times$  7  $\mu$ .

On trunks. Queensland. W. Australia.

**1144. *Auricularia lobata*. Somm. Fr. Hym. Eur. 646. Sacc. Syll. 8295.**

Pileus effused, reflexed, lobed, variegated with strigose zones, or velvety, or smooth, dusky, then whitish; hymenium dusky, livid, reticulately veined by distant folds. Spores oblong-reniform, 15-20  $\times$  7  $\mu$ .

On bark. Queensland. N.S. Wales.

**1145. *Auricularia albicans*. Berk. Linn. Journ. XIII., 170. Sacc. Syll. 8302.**

Orbicular, whitish externally, delicately pubescent beneath; hymenium shining, pitchy black (peculiarly brilliant when dry).

On trunks. Queensland. (Fig. 89).

**1146. *Auricularia minuta*. Berk. Hook. Journ. 1845, p. 50. Sacc. Syll. 8303.**

Gregarious (about 7 m.m. broad), effused behind; pilei minute, effuso-reflexed, lobed, externally tawny umber, hispid, zoned; hymenium even, pruinose, yellow-grey, sometimes proliferous.

On dead branches. W. Australia. Tasmania.

**1147. *Auricularia pusio*. Berk. Linn. Journ. XVII., 386. Sacc. Syll. 8305.**

Pileus adnate behind, reflexed, white, tomentose, rugose; margin lobed ( $\frac{1}{2}$ -1 c.m. diam.); hymenium becoming purplish.

On trunks. Queensland.

GENUS 63. **HIRNEOLA.** *Fries.*

Between cartilaginous and gelatinous, soft when moist, cup-shaped, toughly horny when dry. Hymenium superior. Spores continuous, hyaline.

- 1148. *Hirneola auriformis.*** *Schw. Fr. Fun. Nat.* 26.  
*Sacc. Syll.* 8309.—*Hirneola Lusueurii.* *Lev.*

Cæspitose, stipitate, glaucous brown (5 c.m. broad), cups semiorbicular, veined beneath—and the short, twisted lateral stem—sulcate lacunose, velvety pubescent; hymenium plicate, brown, turning pale.

On trunks. Queensland.

- 1149. *Hirneola polytricha.*** *Mont. in Bel. Voy.* 154. *Sacc. Syll.* 8311.

Cups hemispherical, expanded, ear-shaped, externally villose-tomentose, grey, produced into a very short oblique stem (3-5 c.m. broad), disc even, purplish-brown; spores reniform,  $14 \times 6 \mu$ .

On trunks. Victoria. N.S.Wales. Queensland. S. Australia. Chatham Island. Lord Howe's Island. Torres Straits. (Fig. 90).

- 1150. *Hirneola auricula judæ.*** *Linn. Fr. Hym. Eur.* 695.  
*Sacc. Syll.* 8312.

Concave, flexuous, thin, at length black, venosely plicate on both sides, tomentose beneath (5-12 c.m. broad); spores reniform,  $20-25 \times 7-9 \mu$ .

On trunks. Victoria. N.S.Wales. Queensland. Tasmania.

\*\* *Sessile.*

- 1151. *Hirneola fusco-succinea.*** *Mont. Cuba* 364. *Sacc. Syll.* 8319.

Broad, sessile, shell-shaped, then flattened; margin undulate (3-5 c.m. broad), internally reticulated with veins, amber brown, externally ribbed and rugose, velvety, hoary.

On bark. Queensland. N.S.Wales. S.W. Australia.

- 1152. *Hirneola rufa.*** *Berk. Ann. Nat. Hist. t.* 12, *f.* 17.  
*Sacc. Syll.* 8320.

Cup-shaped, rather lateral, sessile (2-4 c.m. broad), externally beset with fasciculate, short, rufous setæ; hymenium somewhat plicate, smooth, brownish-black.

On trunks. Queensland.

- 1153. *Hirneola hispidula.*** *Berk. Exotic Fungi* 396. *Sacc. Syll.* 8323.

Globose-campanulate, oblique, sessile, internally dark brown, externally covered with short, fawn-coloured, woolly hairs (8-10 c.m.).

On dead wood. Victoria. Queensland.



\* \* *Externally smooth.*

- 1154. *Hirneola vitellina.*** *Lev. Fr. Fungi Nat.* 27. *Sacc. Syll.* 8328.

Cup-shaped, sessile, excavated, obtusely marginate, externally naked, veined; hymenium rugulose, egg-yellow.

On trunks.

- var. ***tasmanica.*** *Berk. Fl. Tasm.* II., 262, t. 183, f. 6.

Pallid, orbicular, undulate, small; stem short, compressed; spores 17-21  $\mu$  long.

On dead wood. Tasmania.

*Sub-Family 2. Tremellinæ. Bref.*

Basidia globose or ovoid, when mature 4-partite in a cruciate manner, rarely continuous.

GENUS 64. **EXIDIA.** *Fries.*

Distended with gelatin, tremulous, submarginate or effused, often papillose, covered with a gelatinous stratum. Spores reniform, for a long time continuous.

- 1155. *Exidia glandulosa.*** *Bull. Fr. Hym. Eur.* 694. *Sacc. Syll.* 8347.

Effused, rather flattened, thick, undulate, turning black, spiculate with conical papillæ (2-3 c.m. broad), cinereous beneath and subtomentose; spores oblong, curved, hyaline, 12-14  $\times$  4-5  $\mu$ .

On trunks and wood. W. Australia. Tasmania. (Fig. 91).

- 1156. *Exidia albida.*** *Huds. Bref. Unt.* VII., p. 94, t. 5, f. 14. *Sacc. Syll.* 8352. = *Tremella albida.* *Huds. Ang.* 365. *Fr. Hym. Eur.* 691.

Ascending, tough, expanded, undulate, subgyrose, pruinose, whitish, tawny when dry (3-10 c.m.); spores oblong, obtuse, curved, biguttulate, hyaline, 12-14  $\times$  4-6  $\mu$ .

On branches. Victoria. N.S. Wales. W. Australia. Tasmania.

GENUS 65. **ULOCOLLA.** *Bref.*

Pulvinate, convex, folded and brain-like, gelatinous. Spores in germinating bilocular.

- 1157. *Ulocolla foliacea.*** *Pers. Bref. VII., t. 6, f. 2.* *Sacc. Syll.* 8367. = *Tremella foliacea.* *Fr. Hym. Eur.* 690.

Cæspitose, even, undulate, flesh-coloured, cinnamon (5-8 c.m. broad), plicate at the base; spores shortly reniform, 10-12  $\times$  5-6  $\mu$ ; conidia 10-12  $\times$  3-5  $\mu$ , cylindrical, rounded at the ends.

On old trunks. Victoria. W. Australia. Queensland. Tasmania. (Fig. 92).

GENUS 66. **TREMELLA.** *Dill.*

Pulvinate or effused, brain-like, spores, conidia, and sporidiola globose or ovoid, always continuous.

- 1158. *Tremella frondosa.*** *Fr. Hym. Eur.* 690. *Sacc. Syll.* 8375.

Cæspitose, large, even, yellow, growing pallid, plicate at the base (to 15 c.m. diam.); lobes gyrose, undulate; basidia globose, 15  $\mu$ ; spores globose, 7-12  $\mu$  diam.

On old trunks. Tasmania.

- 1159. *Tremella lutescens.*** *Pers. Syn.* 622. *Fr. Hym. Eur.* 690. *Sacc. Syll.* 8377.

Cæspitose, small, very soft, undulate-gyrose, yellowish (1-3 c.m.); lobes entire, naked; spores globose, 12-15  $\mu$ .

On fallen branches. Victoria. N.S.Wales. Queensland. S. Australia. Tasmania.

- 1160. *Tremella fuciformis.*** *Berk. Hook. Journ.* 1856, p. 277. *Sacc. Syll.* 8384.

White, cæspitose (2½ c.m. high), repeatedly lobed or furcate, with the lobes, except the last, dilated in a fan-like manner.

On trunks. Queensland.

## I. CEREBRINÆ.

- 1161. *Tremella mesenterica.*** *Retz. Fr. Hym. Eur.* 691. *Sacc. Syll.* 8387.

Simple, ascending, rather tough, variable in form, plicate-undulate, gyrose, orange (2 c.m. high); spores shortly ellipsoid, 6-8  $\mu$  diam.

On dead branches. Victoria. N.S.Wales. Queensland. S. Australia. W. Australia. (Fig. 93).

- 1162. *Tremella olens.*** *Berk. Fl. Tasm.* 262, t. 183, f. 5. *Sacc. Syll.* 8397.

Irregular, gelatinous, pallid, scented; spores oblong, 12-15  $\mu$ .

On rotten wood. Tasmania.

## II. CRUSTACEÆ.

- 1163. *Tremella viscosa.*** *Berk. Outl.* 288. *Fr. Hym. Eur.* 691. *Sacc. Syll.* 8402.

Effused, flattened, undulate, rather viscid, white, then hyaline, margin similar, naked; spores 10-12  $\times$  5-6  $\mu$ .

On old wood. Tasmania.

GENUS 67. **SEISMOSARCA.** *Cooke.*

Tremelloid, very soft and quaking, subglobose, lobate, or gyrose, sessile, covered everywhere by the hymenium. Basidia clavate. Spores continuous, coloured.

**1164. *Seismosarca hydrophora*. Cooke. Grev. XVIII., 25.**

Inflated, gelatinous, lobate (2-3 in. diam.), dingy pale fuliginous, very soft and watery, covered with scattered coloured hairs, which are usually furcate at the base ( $50-60 \times 8 \mu$ ), pointed at the apex. Basidia clavate. Spores elliptical, continuous, bright brown,  $7 \times 4 \mu$ .

On wood. N.S.Wales. (Fig. 94).

**Sub-Family 3. *Dacryomycetæ*.**

Basidia tapering, clavate, furcate upwards, bearing a single sterigma on each apex.

**GENUS 68. *DACRYOMYCES*. Nees.**

Pulvinate, gyrose, spores when mature or in germination transversely or murally divided. Conidia in chains.

**1165. *Dacryomyces miltinus*. Berk. Fl. Tasm. t. 183, f. 7. Sacc. Syll. 8469. = *Tremella cinnabarina*, Berk.**

Small, vermilion-red, gyrose-lobate (3-5 c.m.); spores oblong-reniform, at length six septate,  $12-21 \mu$  long. Sporophores inflated.

On dry wood. N.S.Wales. Tasmania.

**1166. *Dacryomyces rubrofuscus*. Berk. Hook. Journ. 1845, p. 61, t. 1, f. 1. Sacc. Syll. 8171.**

Small, redbrown, black when dry, cracked and gyrose (scarcely 2 m.m. high); spores large, globose or oval, simple or 1-2 septate.

On rotten branches. W. Australia.

**1167. *Dacryomyces deliquescens*. Duby. Bot. Gall. 729. Fr. Hym. Eur. 698. Sacc. Syll. 8472.**

Subrotund, rooting, convex, immarginate yellowish, at length contorted, hyaline (1 c.m. broad); spores oblong, curved, obtuse, triseptate,  $15-16 \times 6-7 \mu$ , four guttulate, hyaline.

On rotten wood. Tasmania. (Fig. 95).

**1168. *Dacryomyces stillatus*. Nees Syst. 89, f. 90. Fr. Hym. Eur. 699. Sacc. Syll. 8473.**

Subrotund, convex, at length plicate, yellow, then orange, colour persistent (3-5 m.m. broad); spores multiseptate, subhyaline, slightly curved,  $18-22 \times 8 \mu$ .

On rotten wood. Victoria. N.S.Wales.

**1169. *Dacryomyces sacchari*. B. & Br. Linn. Trans. II., 65. Sacc. Syll. 8483.**

Irregular, thin, gelatinous, orange-red, seated on a whitish stroma, conidia subglobose, irregularly dispersed.

On stems of *Saccharum*. Queensland.

**1170. *Dacryomyces seriatus*. Berk. Fl. Tasm. 263. Sacc. Syll. 8488.**

Erumptent, seriate, whitish, then yellowish, irregular, somewhat stratose.

On bark. Tasmania

- 1171. *Dacryomyces sclerotioides*.** *Berk. Fl. Tasm.* 263  
t. 183, f. 8. *Sacc. Syll.* 8502.

White, orbicular, depressed in the centre, and cup-shaped.  
On bark. Tasmania.

GENUS 69. **GUEPINIA.** *Fries.*

Unequally cup-shaped, variable in form, substipitate; hymenium discoid or one-sided, basidia linear, furcate, spores curved.

- 1172. *Guepinia merulina*.** (*Pers.*) *Quelet. Sacc. Syll.*  
8514.

Tremellose, tough, orange yellow, solitary or subcaespitose, stem at first clavate, then expanding above in a cup shape, cups with a sinuate margin, smooth within, externally plicate, spores oblong, curved (10-12  $\mu$  long).

On *Melaleuca*. Mariatta.

- 1173. *Guepinia pezizæformis*.** *Berk. Hook. Journ.* 1845, p.  
60. *Sacc. Syll.* 8518.

Minute, velvety, red (3½-4 m.m. high), stem short, velvety, hymenium obliquely cup-shaped, a little rugose, slightly lobed; spores oblong, often curved.

On dead wood. Victoria. Queensland. W. Australia. Tasmania. (Fig. 96).

- 1174. *Guepinia spathularia*.** *Schw. Fr. Elen.* 11., 32.  
*Sacc. Syll.* 8520.

Cæspitose, rather erect, rooting; pileus dimidiate, spathulate, stem pubescent, glaucous (to 5 c.m. long), hymenium orange, plicate.

On dead wood. Victoria. Queensland. N.S. Wales.

**GASTROMYCETEEÆ.** Willd.

Terrestrial, rarely growing on wood, membranaceous, coriaceous, or fleshy, enclosed in a variable receptacle or peridium; fructification consisting of basidii spores, enclosed until maturity in the peridium; spores continuous, spherical or ellipsoid, hyaline or coloured.

*Family I. PHALLOIDEÆ.* *Fr. Sys. Myc.* ii., 281.

Fungi between fleshy and gelatinous, erumpent from a volva; hymenium slimy, rather fleshy, and deliquescent.

*Section A. PHALLEÆ.* *Fr. Sum. Veg. Scan.*

Spore-bearing pulp on the exterior of the receptacle; receptacle stipitiform (hollow), simple, or furnished with appendages to the pileus.

*GENUS I. DICTYOPHORA.* *Desv. Journ. Bot. t. ii.*

Receptacle consisting of a stem (hollow) and a pileus (externally reticulate); indusium or appendage to the stem conical, campanulate, or cylindrical, net-like, depending from the upper part of the stem=*Hymenophallus*, Fries.

**1175. *Dictyophora phalloidea.*** *Desv. ii., p. 88. Sacc. Syll. vii., 2.*=*Phallus indusiatus.*, *Vent.*

Pileus thickened at the apex, at its union with the stem; stem white and lacunose, with two or three strata of cavities; indusium net-like, conic, or campanulate, white, arising from the lower margin of the pileus, and depending almost to the volva, with the lower margin entire; pileus campanulate or conical, white, externally reticulate.

On sandy soil. Queensland.

**1176. *Dictyophora tahitensis.*** *Schl. Linn. xxxi., p. 126. Fisch. Sacc. Syll. vii., 3.*

Stem cylindrical, scarcely narrowed above, walls (also above the insertion of the indusium) lacunose, composed of 1-3 strata of cavities; indusium net-like, conical, lower margin 2-3 times wider than the stem, entire; interstices medium-sized, somewhat rhomboid, not depending to the base of the stem; pileus at the apex of the stem without collar or distinct ring, laterally adnate, ovate, externally densely reticulate-rugose.

On the ground. Queensland. N.S.Wales.

**1177. *Dictyophora speciosa.*** *Meyen., Nov. Acta. xix., p. 236. Sacc. Syll. vii., No. 6.*

Stem 14-16 c.m. long, attenuated gradually upwards, white; indusium white, net-like, arising from the stem a little below the margin of the pileus, dependent to the volva, spreading, campanulate, lower margin entire (15 c.m. diam.); pileus joined to the stem at the apex with a short collar, campanulate, reticulate(?).

On the ground. Queensland.

- 1178. *Dictyophora multicolor.*** *Berk. & Br. Linn. Trans. Ser. 2, Vol. II., t. XIV., f. 16. Sacc. Syll. VII., No. 11.*

About 7 in. high; stem cream-coloured, attenuated at the base; indusium net-like, cylindrical, but little wider than the stem, bright lemon-colour, depending to the middle of the stem, reticulations large; pileus adnate to the apex of the stem, without a distinct collar, conical (2 in. high,  $1\frac{1}{4}$  in. diam. at base), orange, externally minutely reticulated. Fœtid.

On the ground. N.S. Wales. Queensland.

- 1179. *Dictyophora merulina.*** *Berk. Intell. Obs. IX., 404. Sacc. Syll. VII., 13.*

Gregarious; pileus campanulate, conical, rugulose, ochraceous, covered with a fœtid brown sporiferous mass, apex pierced and dentate; stem distinct, rather attenuated, lacunose and spongy, elastic, hollow, white; veil net-like, indusiate, depending for a third of the stem, white, meshes subhexagonal, irregular, lamellate; outer volva spherical, dirty white or brownish, interior tremelloid, rarely connate with the outer; spores  $5 \times 2 \mu$ .

On the ground. Queensland. (Fig. 97).

GENUS 2. **ITHYPHALLUS.** *Fr. Sys. Myc. II.*

Receptacle consisting of a hollow stem and a pileus externally reticulated, or tuberculately rugulose; stem without indusium = *Phallus*, Linn., p.p.

a. RETICULATI. *Pileus externally reticulate.*

- 1180. *Ithyphallus impudicus.*** *Linn. Fr. Sys. Myc. II., 283. Sacc. Syll. 18.*

Attaining 30 c m. high; volva white; stem (3 c m. diam.) attenuated above and below, white, walls composed of 3-4 strata of cells; pileus conical-campanulate ( $5 \times 3\text{--}4$  c m.), joined to the apex of the stem by a ring, white, externally coarsely reticulate; gelatinous mass of spores dark olive.

On the ground. Queensland.

- 1181. *Ithyphallus quadricolor.*** *B. Sacc. Syll. VII., 20. = Phallus quadricolor., Berk. & Br. Linn. Trans. Ser. 2, Vol. II., p. 66, t. XIV., f. 18.*

About  $4\frac{1}{2}$  in. high; stem cylindrical, nearly equal ( $2\frac{1}{2}$  in. long to base of pileus), lemon-colour, volva white, mycelium purple; pileus conical (2 in. long), very wide at the base, orange-coloured, brown when dry, coarsely reticulated; spores ovate, pale brown.

On the ground. Queensland.

- 1182. *Ithyphallus calyptratus.*** *B. Sacc. Syll. VII., 21. = Phallus calyptratus., Berk. & Br. Linn. Trans. Ser. 2, Vol. II., t. XIV., f. 17.*

Scarcely 2 in. high; stem slightly attenuated upwards ( $1\frac{1}{2}$  in. long,  $\frac{1}{3}$  in. thick), pallid; pileus somewhat hemispherical, depressed

( $\frac{1}{2}$  in. diam.), orange. On bursting through the volva a portion is carried up, like a calyptra, on the top of the pileus.

Amongst grass. Queensland.

**1183. Ithyphallus aurantiacus.** *M. Sacc. Syll.* vii., 22.=

*Phallus aurantiacus.*, *Mont. Ann. Sci. Nat.* 1841, 277, t. 16, f. 1.

Stem 6-8 in. long,  $\frac{3}{4}$  in. thick, a little attenuated upwards, orange, rounded at the apex, at first closed, then pervious; pileus without collar or ring, joined to the apex of the stem, and pressed to it, thimble-shaped, orange, about an inch high, delicately reticulately rugose.

On the ground. Queensland.

**1184. Ithyphallus novæ hollandiæ.** *Ca. Sacc. Syll.* vii., 23.

=*Phallus novæ-hollandiæ.*, *Corda Ic. Fung.* vi., 19, t. III., f. 46. *Cynophallus cayleyi.*, *Berk. in Grev.* xi., 57.

Stem white, slender, attenuated upwards; pileus narrowly campanulate, almost cylindrical, scarcely broader than the stem, externally reticulate (?); spores  $3 \times 1\frac{1}{2} \mu$ .

On the ground. N.S.Wales. Queensland. (Fig. 98).

*b. RUGULOSI.* *Pileus externally tuberculosely rugulose.*

**1185. Ithyphallus retusus.** *Kalch. Sacc. Syll.* vii., 27.=

*Phallus retusus.*, *Kalch. Gastro.* p. 6, t. 2, f. 1. *Omphallophallus Mullerianus.*, *Kalch. Flora* 1883, p. 95.

About 6 in. high; stem an inch or more thick, cylindrical, not attenuated at the apex; pileus ovate, closed at the apex, retuse above the apex of the stem, externally white, slightly rugose, internally grey.

On the ground. N.S.Wales.

**1186. Ithyphallus rubicundus.** *Bosc. Sacc. Syll.* vii., 29.

=*Phallus rubicundus.* *Bosc. Fr. Syst. Myc.* ii., 284.

Stem 16-17 c.m. high, fusiform,  $1\frac{1}{2}$ -2 c.m. thick in the middle, red; pileus conical-campanulate, 3 c.m. high, even (?), clad with a fuscous gluten, joined to the apex of the stem by a collar, pervious.

On the ground. Victoria.

**Phallus vitellinus.** *Muell.*

No description known.

Victoria.

GENUS 3. **MUTINUS.** *Fries Veg. Scan.* ii., 434.=*Cynophallus.*, *Fr. Sys. Myc.* ii., 1822.

Receptacle stipitiform, without distinct pileus, covered in the upper part with the sporiferous pulp, the lower part naked. The sporiferous portion equal to, or rather broader, than the stem.

**1187. Mutinus? Watsoni.** *Berk. Linn. Journ.* xviii., p. 387.

*Sacc. Syll.* vi., 737.

About  $2\frac{1}{2}$  in. high. Spore-bearing portion conical, one-fourth the length of the entire receptacle, minutely veined, red, about  $\frac{1}{4}$  in. diam. at the base, pervious at the apex.

On the ground. Burnett's River.

- 1188. *Mutinus? curtus*.** *Berk. in Hook. Journ.* 1845, 69.  
*Sacc. Syll.* VII., 38.

About one inch. Receptacle broadly truncate at the apex, per-  
vious, spore-bearing portion ( $\frac{3}{4}$  in. long) oblong, smooth; stem  
 $\frac{1}{3}$  in. high, yellow, nearly equal, volva oblong, white, splitting  
with two or three irregular lobes. Very fœtid.

On the ground. W. Australia.

- 1189. *Mutinus papuasius*.** *Kalch. Grer.* IV., 74. *Kalch.*  
*Phall. Novi.* t. 3, f. 1. *Sacc. Syll.* VII., 39.

About 3-4 in. high. Receptacle thin and slender (3-4 m.m.  
diam.), pallid. Spore-bearing portion ovate-conical or somewhat  
pear-shaped, thicker than the stem, even, black.

On the ground. Queensland. (Fig. 99.)

- 1190. *Mutinus? discolor*.** *Kalch. Grer.* IX., p. 2. *Kalch.*  
*Phall. Novi.* p. 19, t. 1, f. 4. *Sacc. Syll.* 40.

Stem cylindrical, orange; spore-bearing portion one-sixth of the  
whole receptacle, broad, thimble-shaped, lower margin extruded,  
free, adnate above to the stem; apex at first closed, then per-  
vious, yellowish-grey, or at length turning black, delicately reticu-  
lately rugose.

On the ground. Queensland.

#### Section B. CLATHRÆ.

Sporiferous pulp spread over the interior face of the receptacle.  
Receptacle hollow, latticed, or lobed, stipitate, or without a stem.

#### GENUS 4. **CLATHRUS.** *Mich. Nov. Pl.* p. 214.

Receptacle without stem, hollow, clathrate, or consisting of a  
few vertical branches joined at the apex, enclosing the sporiferous  
pulp.

- 1191. *Clathrus triscapus*.** *Turnp. Dict. Sci.* t. 25, p. 248.  
*Sacc. Syll.* 51.

Receptacle consisting of three vertical branches, slender, thin,  
and straight, attenuated upwards, diverging from the base, joined  
at the apex, white below, cinnabar red about the apex ( $2\frac{1}{2} \times 2$   
in.), mass before liquefaction suspended at the apex of the  
receptacle.

On the ground. Queensland.

- 1192. *Clathrus pusillus*.** *Berk. Hook. Journ.* 1845, p. 67, t. 1,  
f. 6. *Sacc. Syll.* VII., 55.

Small. Volva nearly cylindrical or obovate ( $\frac{1}{2}$ - $\frac{3}{4}$  in. diam.).  
Receptacle cancellate in the upper portion, or consisting of vertical  
branches united at the apex (about  $1\frac{1}{2}$  in. high), transversely  
rugose, bright ruby red, interstices subpentagonal. Spores minute,  
oblong-elliptical.

On the ground. Queensland. W. Australia.



- 1193. *Clathrus gracilis*.** *Schl. Linn.* 1861, p. 166. *Sacc. Syll.* VII., 58.=*Ileodictyon gracile*, *Berk. Hook. Journ.* 1845, p. 69, t. 2, f. 8.

Volva globose, splitting into about four lobes, furnished at the base with a few fibrous roots (about  $1\frac{1}{2}$  in. diam.). Receptacle ovoid, white interstices obscurely hexagonal, branches thin, flattened ( $\frac{1}{2}$ -1 line), smooth, internally covered entirely by the hymenium. Spores minute, oblong-elliptical.

On the ground. W. Australia. Victoria. N.S. Wales. Tasmania.

- 1194. *Clathrus albidus*.** *Lothar Becker. Sacc. Syll.* VII., 61.

About 5 c.m. high, branches of receptacle (18 m.m. long) externally, with a broad channel, white, then yellowish.

On the ground. Victoria.

- 1195. *Clathrus cibarius*.** *Fischer in Sacc. Syll.* p. 20.=*Ileodictyon cibarium*, *Tul. Ann. Sci. Nat.* 1844, p. 114. *Corda Icon.* VI., 26.=*Clathrus Tepperianus*, *Ludw. Bot. Centr.* 1890, p. 5.

Receptacle spherical or ovoid (6-8 in. diam.), white, altogether more robust than in *C. gracilis*, interstices broad; branches ( $\frac{1}{2}$ -1 c.m. thick) even or a little tuberculose.

On the ground. Victoria. Queensland. Harkaway Range. Mount Dromedary. (Fig. 100.)

- 1196. *Clathrus crispus*.** *Turp. Dict. Sci. Nat. Sacc. Syll.* VI., 60.

Receptacle spherical or obovate,  $1\frac{1}{2}$ -3 in. high, cinnabar-red or salmon-colour, interstices rounded or oval; margin transversely rugose, the largest in the middle and below, the smallest at the top of the receptacle.

On sandy soil. Queensland.

Differs from the other species in the rounded interstices.

- GENUS 5. **COLUS.** *Cav. & Sec. Ann. Sci. Nat.* 1835, p. 251.

Receptacle clathrate in the upper portion, which includes the sporiferous pulp, stipitate below. The clathrate part with all the interstices vertically elongated, or the lower elongated and the upper small and polygonal.

- 1197. *Colus hirudinosus*.** *C. & S. Ann. Sci. Nat.* 1835, t. 8, f. 1-5. *Sacc. Syll.* VII., 62.

Receptacle fusiform, white, turning red at the apex. Stem obconical, running above in a straight line into the clathrate part, the clathrate part consisting of 7-9 thick, nearly equal vertical branches, hollow within, forming quadrilateral interstices, joined at the apex, and forming a few small polygonal areolæ, branches below, externally of the structure of the stem, internally rugose, upwards (forming the apical areolæ) somewhat quadrilateral, sulcate on the back, everywhere minutely rugulose.

On the ground. W. Australia. (Fig. 101.)

GENUS 6. **LYSURUS.** *Fr. Sys. Myc.* II., 285.

Receptacle stipitate, divided above in vertical lobes, free at the apex, distinct from the stem. Sporiferous pulp on the interior of the lobes.

**1198. *Lysurus australiensis.*** *Cooke & Mass. Grev.* XVIII., p. 6. = *Mutinus sulcatus.*, *C. & M. Grev.* XVII.

Receptacle (2-3 c.m. long) tawny, for the most part five-lobed; lobes attenuated upwards, at first connivent, then somewhat reflexed, with a longitudinal depression along the middle, transversely rugose. Stem cylindrical (10-12 c.m. long, nearly 2 c.m. thick), hollow, cellular, whitish. Volva globose, torn in lobes, white. Pulp rufous brown, becoming blackish. Spores  $3 \times 1 \mu$ .

On the ground. Queensland. (Fig. 102.)

GENUS 7. **ANTHURUS.** *Kalch. Grev.* IX., p. 2.

Receptacle stipitate, or with a very short stem, divided above into erect patent laciniae, free at the apices, but running down direct into the stem, and not distinct from it.

**1199. *Anthurus Mullerianus.*** *Kalch. Phall. Novi.* 22, t. 3, f. 3. *Sacc. Syll.* VII., 69.

Receptacle yellow, becoming reddish, below the middle stem-like, about the base scarcely 5 m.m. thick, above cup-shaped or funnel-shaped, dilated; margin over an inch broad, divided into eight distant laciniae, separated by a rounded sinus  $\frac{3}{4}$  in. long, erect, patent, apex recurved, inner face red and rugose.

On the ground. N.S. Wales. (Fig. 103.)

**1200. *Anthurus? Archeri.*** *Berk. in Fl. Tasm.* II., p. 264. *Sacc. Syll.* VII., 71.

Receptacle  $3\frac{1}{2}$  in. high, rosy; stem very short (2 c.m. long), dividing into five very long erect lobes, a little recurved at the apices, attenuated in both directions, four or three-angled (1 c.m. thick), pierced with numerous cavities, very shortly bifid at the extremity.

On the ground. Tasmania.

GENUS 8. **ASERÖE.** *La Bill. Voy.* p. 145.

Receptacle stipitate, expanded above in a horizontal limb or disc, with the margin divided into teeth. Sporiferous pulp imposed on the upper surface of the disc or limbs, but not on the upper part of the teeth.

**1201. *Aseröe rubra.*** *La Bill. Voy.* 145. *Sacc. Syll.* VII., 76.

Stem becoming red, or pallid rose, pervious at the apex, superior margin horizontally expanded, inferior running into the stem; margin divided into 5-8 teeth, red above, horizontally expanded, bifurcate more or less deeply, the twin branches joined at an acute angle; sporiferous pulp covering the limb and the upper surface of the base of the rays.

On the ground. S. Australia. Victoria. Queensland. N.S. Wales. (Fig. 104.)

var.  $\beta$ . **pentactina.** *Endl. Schlecht Diss.* 7.

With five bifid rays.

On the ground. N.S.Wales.

**1202. Aseröe lysuroides.** *Fischer. Sacc. Syll.* 26.=

*Lysurus aseröiformis.*, *Corda Ic.* vi., t. 4, f. 3-8.

Stem white, slender, long, a little dilated at the apex, closed, expanded in a horizontal disc; disc carmine-rose above (2 c.m. diam.), externally distinct from the stem; margin divided into 6-7 irregular lobes (2-3 c.m. long), which are dichotomous or twice dichotomously divided above, deflexed, apices subulate, white below, rosy above; sporiferous pulp covering the disc and lower part of the lobes; lobes at first united together.

On the ground. New Holland. Tasmania.

*Family II. NIDULARIACEÆ.* *Fr. Sys. Myc.* III., 296.

Cup-shaped when mature, coriaceous, containing numerous lens-shaped or spherical sporangioles, generally united by a thread to the interior wall of the receptacle. Spores elliptical, continuous.

GENUS 9. **CYATHUS.** *Hall Helv.* III., 127.

Peridium at first obovate or fusiform, obtuse, at length dehiscing at the apex, but closed by a white operculum; composed of three closely applied membranes. Sporangia flattened, umbilicate, with a funiculus attached to the wall. Spores innate.

**1203. Cyathus novæzealandiæ.** *Tul. Mon. Nid.* t. 6, f. 1-5.

*Sacc. Syll.* VII., 95.

Elongated, narrow, brown, externally woolly with adpressed down, internally striate, sulcate; margin scarcely distinctly tomentose, corona very short, continuous. Sporangia 15-18 thick, plane disciform, very black, smooth, almost destitute of umbilicus,  $2\frac{1}{2}$ -3 m.m. diam.; tunic very thin, scarcely conspicuous; spores numerous, elliptic,  $11-13 \times 5\frac{1}{2}-6\frac{1}{2} \mu$ , somewhat acute at each end, even.

On rotten wood. N.S.Wales. New Zealand.

**1204. Cyathus Montagnei.** *Tul. Mon. Nid.* t. 4, f. 9-11.

*Sacc. Syll.* VII., 96.

Peridium crucible-shaped or obconic, externally ferruginous, with a few woolly hairs, internally smooth, striate and ciliate above; sporangia rounded-elliptic, umbilicate, turning black, tunic very thin (2 m.m. diam.). Spores thick, elliptical, obtuse at the ends,  $20 \times 13 \mu$ , even.

On chips, etc. W. Australia. Queensland.

**1205. Cyathus intermedius.** *Tul. Mon. Nid.* t. 4, f. 4-7.

*Sacc. Syll.* VII., 98.

Cup-shaped, obconic, externally ferruginous, turning yellowish, hairy, with spreading fasciculate hairs, internally bluish lead-colour, slightly striate; sporangia turning black (2 m.m. diam.), tunic very thin, substance in the middle become black; spores ovoid,  $15 \times 8-9 \mu$ , epiphragm floccosely mealy, white.

On rubbish. Queensland.

- 1206. *Cyathus desertorum*.** *Muell. Linn. Journ.* XVIII., p. 387. *Sacc. Syll.* VII., 104.

Pallid, tomentose, smooth within and even; sporangia black, externally delicately sulcate; spores subglobose,  $4\frac{1}{2} \times 4 \mu$ . Peridia 5 m.m. broad, 1 c.m. high.

On sandy soil. N.S.Wales.

Section 2. OLLA. *Tul.*

- 1207. *Cyathus Lesueurii*.** *Tul. Mon. Nid. t. v., f. 5-13.* *Sacc. Syll.* VII., 109.

Peridium membranaceous, thin, grey, then pallid, externally clad with substellate hairs, or naked, internally smooth, not striate or ciliate at the margin; sporangia discoid, black, even, with a very thick, tough tunic ( $2-2\frac{1}{2}$  m.m. diam.), substance thin; spores thick, elliptic, even,  $28\frac{1}{2}-33 \times 22-24 \mu$ .

On rotten wood. Victoria. N.S.Wales. Queensland.

- 1208. *Cyathus vernicosus*.** *D. Cand. Flor. Fr.* II., 270. *Tul. Mon. Nid. t. v., f. 14-23.* *Sacc. Syll.* VII., 110.

Peridium campanulate, narrowed at the base, subsessile, broadly open above, undulated-repand, ochraceous-pallid or cinereous, then dusky, tomentose, at length becoming smooth, internally lead-colour or brown, shining, at length bay-brown, even; epiphragmium thin, floccose, white, torn; sporangia pallid, then blackish ( $2\frac{1}{2}-3$  m.m. diam.), even, mealy, orbicular, with a rather thick continuous grey tunic, funiculus white; spores ovoid,  $12-13 \times 6\frac{1}{2}-7 \mu$ , even, hyaline.

On the ground and twigs. Queensland. W. Australia. Victoria.

- 1209. *Cyathus fimicola*.** *Berk. Linn. Journ.* XVIII., 387. *Sacc. Syll.* VII., 116.

Cup-shaped, umber, growing pale, minutely velvety; sporangia of the same colour (2 m.m. diam.); spores oval,  $30 \times 22 \mu$ .

On dung. Queensland. Victoria. (Fig. 105.)

- 1210. *Cyathus pezizoides*.** *Berk. Linn. Journ.* XVIII., 387. *Sacc. Syll.* VII., 117.

Cup-shaped, externally densely tomentose with flexuous hairs, umber, very small ( $1-1\frac{1}{2}$  m.m. diam.), internally even, smooth sporangia lenticular, without umbilicus ( $\frac{1}{2}$  m.m. diam.); spores very numerous, oblong-elliptic,  $7-8 \times 4 \mu$ , smooth, hyaline.

On rotting herbs. Queensland.

- 1211. *Cyathus pusio*.** *Berk. Linn. Journ.* XVIII., 387. *Sacc. Syll.* VII., 118.

Wineglass-shaped, whitish, externally clad with a fine adpressed tomentum, internally smooth, even; sporangia pallid; spores elliptical,  $8-10 \times 4 \mu$ , smooth, hyaline.

On trunks of *Eucalyptus*. Queensland.

**1212. *Cyathus dasypus*. Nees. Phys. Ber. 41. Sacc. Syll. VII., 113.**

Peridium bell-shaped, subcylindrical, unequal, externally pale ochraceous, adpressedly and minutely tomentose, internally lead-colour, smooth, even; sporangioles thick, unequal and irregular, cinereous, smooth, umbilicus punctiform, funiculus small, white; spores ovate ( $11 \times 7\frac{1}{2}$ - $8\frac{1}{2} \mu$ ).

On naked ground. Victoria.

**1213. *Cyathus fimetarius*. DC. Fl. Fr. v., 104. Sacc. Syll. VII., 121.**

Peridium hemispherical, wholly tawny-rufous, externally velvety, internally smooth; sporangia of the same colour, lens-shaped, somewhat punctate or granulaté.

On dung. Queensland.

**1214. *Cyathus Colensoi*. Berk. Fl. Nov. Zeal. II., 192. Sacc. Syll. VII., 127.**

Densely crowded, cup-shaped,  $\frac{1}{4}$  in. high, thin, flexible, dirty umber-coloured, externally pubescent, internally even, brownish; sporangia irregular, brown, thick walled ( $1\frac{1}{2}$ - $1\frac{3}{4}$  m.m.); spores ovoid, minute,  $8 \times 6 \mu$ .

On the ground. S. Australia. N.S.Wales. Tasmania.

**GENUS 10. *CRUCIBULUM*. Tul. Mon. Nid. p. 89.**

Peridium at first globose, then crucible-shaped, closed by a mealy operculum of the same colour, continuous with the margin of the cups; substance homogeneous, fibrous, not formed from distinct strata, mouth naked, not coronate; sporangia flattened, orbicular.

**1215. *Crucibulum vulgare*. Tul. Mon. Nid. p. 90. Sacc. Syll. 128.**

Peridium cylindrical-campanulate, truncate at both ends, ochraceous, then ferruginous, tomentose when young, then smooth, rather thick, even, mouth quite entire, naked, broadly open, internally even, smooth, shining, yellow, becoming pallid; sporangia white, at length pallid, or pallid-ochraceous ( $1\frac{1}{2}$ -2 m.m. diam.); orbicular; spores elliptic,  $8-9 \times 4-4\frac{1}{2} \mu$ , even, hyaline.

On twigs, wood, etc. Victoria. Queensland. (Fig. 106.)

**1216. *Crucibulum simile*. Mass. Grev. XIX., 94.**

Crowded or usually scattered, subcylindrical, 6-7 m.m. high, becoming bell-shaped, and with the margin of the mouth revolute, externally densely crowded with a very short, dull, orange tomentum, internally whitish, smooth, even; sporangiola biconvex, white, 1 m.m. diameter; spores colourless, subglobose, small,  $4 \times 3 \mu$ .

On bark and wood. New Zealand. Australia.

**GENUS 11. *SPHÆROBOLUS*. Tode.**

Peridium rounded, at first closed, sessile, double, then stellate, interior membranaceous, at length elastic, ejecting the sporangiole,

which is single, solid, subglobose, polysporous ; spores globose or ovate.

**1217. Sphærobolus stellatus.** *Tode Meck. p. 43. Sacc. Syll. 136.*

External peridium subsphæroid, rather fleshy, dehiscing with 5-8 acute, equal teeth, yellow, growing pallid ; interior peridium pellucid, whitish ; sporangia fleshy ; spores ellipsoid, sphæroid, hyaline, even,  $8.9 \times 6 \mu$ .

On wood, chips, etc. Tasmania. Victoria. (Fig. 107.)

### Family III. LYCOPERDACEÆ.

Globose or pear-shaped, sessile or stipitate ; peridium membranaceous or coriaceous, dehiscing irregularly or with a mouth ; gleba floccose, powdery ; spores spherical.

#### Sub-Family A. Podaxinæ.

Peridium traversed by a columella or continuation of the stem.

GENUS 12. **SECOTIUM.** *Kunze Flora 1840, 321.*

External peridium volvæform ; stem firm, entering the interior of the peridium ; internal peridium pilate, closed, then opening at the base, internally veined and cellular ; spores simple.

**1218. Secotium acuminatum.** *Mont. Fl. Alg. 371, t. 22, f. 4.* = *S. Czerniavii.*, *Mont. Bot. Rev. Sacc. Syll. VII., 146.*

Solitary ; peridium ovoid, tan-colour or ochraceous (1-2 in. high), acuminate at the apex, cuticle breaking up into scales, plicate and repand at the base ; stem short, turbinate ( $1\frac{1}{2}$ -3 in. long) ; cavities gyrose, transversely seriate, septa thin ; spores spherical, even, yellowish olive.

On the ground. W. Australia.

**1219. Secotium coarctatum.** *Berk. Hook. Journ. 1845, 63. t. 1, f. 3. Sacc. Syll. VII., 150.*

Minute, strong scented ; peridium obovate, umbilicate, margin acute, bent inwards ( $\frac{1}{2}$ - $\frac{3}{4}$  in. broad), veil marginal, torn, appendiculate ; stem slender, cylindrical, even, smooth ( $\frac{3}{4}$  in. high), passing through the hymenium ; spores minute, obovate, nucleate, apiculate, ochre, then cinereous,  $6 \mu$  long.—*Corda Icon. VI., t. 6, f. 25-30.*

On the ground. W. Australia.

**1220. Secotium melanosporum.** *Berk. Hook. Journ. 1845, 62, t. 1, Fig. 2. Sacc. Syll. VII., 151.*

Cæspitose ; pileus (2-3 in. diam.) subglobose, at first umbilicate, sparingly furfuraceous, except at the apex, margin obtuse and rounded, veil torn and appendiculate ; stem ( $2-2\frac{1}{2} \times \frac{1}{3}-\frac{1}{2}$  in.), solid, passing through the hymenium, nearly equal ; spores obliquely ovate, pedunculate, dark chocolate brown,  $9 \mu$  long.—*Corda Icon. VI., t. 6, f. 19-24.*

On the ground. W. Australia.

- 1221. *Secotium erythrocephalum*.** *Tul. Ann. Sci. Nat.* 1884, 115. *Sacc. Syll.* VII., 152.

Gregarious, rather long stemmed; stem erect, smooth, naked, white, narrowly fistulose; peridium innate, simple, even, smooth, carmine-red; cells unequal, large, septa thin, distinct, destitute of flocci, basidia arising from the walls bearing 2-4 spores; spores elliptic, even, brown, on long sterigmata ( $10-11 \times 5 \mu$ ).

On the ground. New Zealand. Tasmania. (Fig. 108.)

- 1222. *Secotium Gunnii*.** *Berk. in Herb. No. 4412. Sacc. Syll.* VII., 156.

Small; stem slender, 1-5 c.m. high, 3 m.m. thick, solid, equal or slightly incrassated downwards, pale brown; passing through the gleba as a columella and expanding at the apex into a thick wall; peridium 1-5 c.m. across, subglobose, deeply umbilicate below, pale brown, smooth; flesh of stem and wall of peridium whitish; gleba brown, cells small, irregularly polygonal; basidia clavate, tetrasporous, sterigmata very slender, elongate; spores obliquely elliptical, tips acute, smooth, pale reddish-brown,  $7 \times 4 \mu$ .

On the ground. Tasmania.

- 1223. *Secotium scabrosum*.** *Cke. & Mass. Grev.* xx., 35.

Peridium hemispherical, depressed, dingy olive or greyish (2 c.m. diam.), minutely scabrous; gleba lacunose, septa gill-like, waved and folded, dark reddish-brown; spores lemon-shaped, rather coarsely warted, pale olive-yellow ( $16-18 \times 10 \mu$ ); stem very short, almost obsolete.

On the ground. Victoria.

### GENUS 13. **CHAINODERMA.** *Mass.*

Peridium elongato-fusiform or clavate, tapering into a short stem-like base, wall rather thick, consisting of a single stratum; columella thick, compact, passing quite through the peridium, and firmly attached to the apex; the cavity between the columella and the outer wall is occupied by the gleba, consisting of numerous interwoven septate hyphæ, bearing clusters of tetrasporous clavate basidia at intervals; spores unicellular, coloured. Dehiscence is effected by the splitting of the central portion of the wall into longitudinal shreds, due to the shortening of the columella.

- 1224. *Chainoderma Drummondii*.** *Mass. Grev.* xix., 46. = *Secotium Drummondii*, *Berk. in Herb.*

Clavato-fusiform (5-6 c.m. high, by 1-5 c.m. at widest part); peridium dingy-brown, smooth, even, at length longitudinally fissured, columella pale; mass of spores dingy brown; basidia  $50 \times 12 \mu$ , clavate, fasciculate; spores broadly elliptical, with the remains of the sterigma usually persistent, epispore thick, smooth,  $10 \times 8 \mu$ .

On the ground. W. Australia. (Fig. 109.)

GENUS 14. **CYCLODERMA.** *Klotsch.*

Sessile. Peridium double; exterior coriaceous, soft, interior distinct, thin and papery; columella scyphiform, adnate in the centre of the peridium, capillitium radiating, joining the inner wall of the peridium to the columella. Spores minute.

**1225. *Cycloderma platyspora.*** *Cke. & Mass. Grev. xvi., 74.*

Ovate, somewhat umbonate at the apex, external peridium thick, flexile, continuous, even, ochraceous; internal peridium thin, shining; columella conic or clavate, central; capillitium and spores cinereous-lilac, threads simple, radiating, pallid, equal to the diameter of the spores. Spores globose, minutely rough with granules, pale grey ( $8\ \mu$  diam.).

On the ground. Victoria. (Fig. 110.)

GENUS 15. **MESOPHELLIA.** *Berk. Fl. Tasm. 266.*

Peridium thick, coriaceous, corky, or fragile, attached to creeping branched fibres; capillitium anastomosing, radiating from a central corky columella. Spores fusoid, hyaline.

**1226. *Mesophellia arenaria.*** *Berk. Linn. Trans. xxii., 131, t. 25. Sacc. Syll. vii., 162.*

Peridium thick, elliptical, often depressed, externally clad with whitish flocci, internal hyphæ reddish grey, radiating from the central suberous columella; spores fusoid, obtuse at the ends,  $12 \times 4\ \mu$ , brownish.

On the ground. Tasmania. New Holland. (Fig. 111.)

**1227. *Mesophellia ingratisissima.*** *Berk. Linn. Journ. xviii., 386. Sacc. Syll. vii., 163.*

Strong-scented; peridium crustaceous, very fragile, subglobose; flocci thin, brownish; spores shortly fusiform, apiculate at each end,  $10\text{--}12\ \mu$  diam., brownish.

On the ground. Victoria.

**1228. *Mesophellia scleroderma.*** *Cooke Grev. xiv., p. 11. Sacc. Syll. vii., 164.*

Peridium hard, corky, ochraceous, depressedly globose, externally cracked to the apex in rhomboidal areolæ; internally olive, centre hollow; spores elliptical, nearly hyaline,  $10 \times 4\ \mu$ ; capillitium obsolete.

On the ground. New Zealand.

GENUS 16. **PODAXIS.** *Desv. = Podaxon. Fries.*

Peridium at first subterranean, sessile, concealing the gleba, which is traversed by a central axis; substance of gleba spongy, without distinct cavities or plates. Asci monosporous, in dense clusters; capillitium copious, or obsolete. Peridium after spore formation elevated on a long stem, dehiscing at maturity by being irregularly torn, and separating from the stem at its basal attachment.—*Mass. Mon. Podaxis.*



- 1229. *Podaxis carcinomalis*.** *Linn. Fr. Syst. Myc.* III., 62.  
*Sacc. Syll.* VII., 168.

Peridium ovate-oblong, whitish, irregularly dehiscent at the base; stem cylindrical, even, thick, curved; spores dark brown, elliptical,  $10 \times 12 \mu$ , threads thicker than the spores. Peridium 7-20 c.m. high, 5-12 c.m. broad. Stem 12-40 c.m. long.

In sandy places. Queensland. S. Australia.

- 1230. *Podaxis indica*.** *Spreng. Syst. Veg.* v., 518.=  
*Podaxon pistillaris*, *Linn. Fr. Syst. Myc.* III., 63. *Sacc. Syll.* VII., 171.

Stem fibrillose-striate, often longitudinally twisted; peridium clavate, ovate-oblong, four times broader than the stem, which is twice as long, invested with a saffron yellow membrane, flocci curved, flexible, collapsing, ferruginous; spores subglobose, of the same colour, then vinous,  $10-12 \times 9-10 \mu$ . Peridium 7-10 c.m.  $\times$  3-4 c.m. Stem 10-17 c.m. long.

On the ground. Victoria. Queensland. (Fig. 112.)

- 1231. *Podaxis axata*.** *Bosc. Mass. Mon. p.* 14.=*Podaxon calyptratus*, *Fr. Syst. Myc.* III., 63. *Sacc. Syll.* VII., 170.

Tuberous, rooting, oblong, prolonged downwards; stem fistulose, substance woody, formed of obliquely twisted fibres; peridium ovate, columella continued from the stem, when mature splitting into numerous laciniae, clad at the apex with the scaly remains of the calyptra. Spores somewhat olive,  $18-20 \times 10-12 \mu$ . (Peridium 6-8 c.m. high. Stem 10-17 c.m. long.)

Dry sandy places. Lachlan River. Wilcanna.

#### GENUS 17. **GYMNOGLOSSUM.** *Mass.*

Peridium entirely absent at every stage, the gleba consequently naked, subcylindrical, attenuated upwards, broken up throughout its entire substance into numerous large, irregular cavities, lined with large, clavate tetrasporous basidia, sterigmata elongated, slender; spores coloured; stem distinct, elongated, solid, passing up into the gleba for about half its height as a central columella.

- 1232. *Gymnoglossum stipitatum*.** *Mass. Grev.* XIX., 97.

Gleba obtusely conical, irregularly undulated and lacunose, pale brown, 5 c.m. high, 2 c.m. broad; stem about 1-5 c.m. high, 3-4 m.m. thick, solid, whitish within, pale brown externally, continuing for about two-thirds the height of the gleba as a subflexuous columella; external cavities of gleba sterile, inner irregularly angular or flexuose, lined with basidia; spores elliptical, ends acute, smooth, olive-brown,  $10 \times 6 \mu$ .

On the ground. N.S. Wales. (Fig. 135).

#### GENUS 18. **PROTOGLOSSUM.** *Mass.*

Subterranean; peridium elongated, cylindrical, vertical, sometimes attenuated at the base into a very short stem-like portion, that is continued for a very short distance up the peridium as a rudimentary columella; peridium thick, continuous, indehiscent;

gleba broken up into minute, irregularly angular or sinuous cavities, septa thick, firm, persistent, not splitting; basidia clavate, constantly bisporous, sterigmata rather thick, divergent, spores coloured.

**1233. *Protoglossum luteum*. Mass. Grac. XIX., 97.**

Peridium cylindrical, 5 c.m. high by 2 c.m. broad, growing vertically, with the extreme apex appearing above ground, and of an orange colour, the subterranean portion yellowish, smooth, even; cavities of gleba about 1 m.m. diameter; spores globose, orange-brown, epispore raised into prominent flattened ridges that anastomose to form a polygonal network, 14  $\mu$  diameter.

Victoria. Queensland. (Fig. 134).

*Sub-Family B. Diplodermeæ.*

Peridium single or double, stipitate or sessile, gleba floccosely pulverulent.

GENUS 19. **TYLOSTOMA. Pers.**

Peridium stipitate, double, external at first fleshy, then falling away, internal papery or coriaceous, persistent, pierced with a mouth at the vertex, rarely dehiscing irregularly; stem long; gleba fleshy, then powdery, capillitium branched; spores globose.

**1234. *Tylostoma mammosum*. Mich. Fr. Syst. Myc. III., 42. Sacc. Syll. VII., 175.**

Stem fistulose (with a central thread in the cavity of the stem), equal, straight, not sulcate, covered more or less with deciduous scales, as if at the base forming a fibrous volva, becoming woody when old and smooth; peridium globose, cortex powdery, seceding, whitish, with a minute, prominent mammosc mouth, not fimbriate. Spores ferruginous, globose, 4-5  $\mu$  diam.

On the ground. Victoria. Queensland.

**1235. *Tylostoma leprosum*. Kalch. Grac. IV., 72. Sacc. Syll. VII., 177.**

With the habit of *T. mammosum*; peridium clad with a lurid umber, deciduous, mealy scurf; spores minute, scarcely echinulate, as well as the capillitium flesh colour, becoming reddish.

On the ground. Queensland.

**1236. *Tylostoma Wightii*. Berk. Hook. Journ. 1842, 157. Sacc. Syll. VII., 182.**

Peridium papery, ovately globose (2 c.m. broad); stem rather scaly (2½ c.m. long), equal; mouth of peridium scarcely prominent, appendiculate; spores not echinulate.

On the ground. Queensland.

**1237. *Tylostoma maximum*. Cle. & Mass. Grac. XV., 94. Sacc. Syll. VII., 184.**

Peridium smooth, ochraceous, with a rounded mouth (nearly an inch diam.); stem elongated, equal, of the same colour, fibrillose below, striately sulcate above, capillitium tawny orange. Spores globose, warted, 7  $\mu$  diam., bright golden tawny.

On the ground. Gascoyne River. (Fig. 113.)

- 1238. *Tylostoma fimbriatum*.** *Fries. Syst. Myc.* III., 43.  
*Sacc. Syll.* VII., 185.

Peridium nearly naked, scales deciduous, becoming tawny, very obtuse; stem tawny ochre, whitish within, distinct from the peridium, equal, almost naked, stuffed, thicker in the middle, scarcely becoming woody; mouth of the peridium plane, fimbriately torn; spores pale brown,  $3\frac{1}{2}$ -5  $\mu$ .

On sandy soil. W. Australia. Victoria. Lake Albacutya.

- 1239. *Tylostoma brachypus*.** *Czern. Bull. Mosc.* 1845, 144.  
 = *Tylostoma granulorum*, *Lev. Demid. Voy. t. iv.*, f. 1.  
*Sacc. Syll.* VII., 193.

Peridium globose, depressed, brown (to  $2\frac{1}{2}$  c.m. broad); mouth areolate, mamiform, rough, margin torn and toothed, paler; stem rather thick (1-3 c.m. long, 3-8 m.m. thick), rarely clad with thin scales.

On the ground. W. Australia. Victoria.

- 1240. *Tylostoma album*.** *Mass. Grev.* XIX., 95.

Stem 1-5 c.m. high, .5 m.m. thick, ochraceous, longitudinally wrinkled; peridium globose, minutely umbonate, white, glabrous and shining; mass of spores ochraceous-cinnamon; capillitium dense, threads hyaline, thick-walled, often branched, axils lunate, aseptate, variable in thickness, from 8-12  $\mu$ ; spores yellow-brown, globose, coarsely warted, 10-11  $\mu$  diam.

On the ground. W. Australia.

- 1241. *Tylostoma pulchellum*.** *Sacc. Bull. Soc. Myc. Fr.* 1889, t. 14, f. 4.

Minute, shortly stipitate; stem cylindrical, smooth, longitudinally striate, whitish, dilated at the base (5 m.m. long,  $1\frac{1}{2}$  m.m. thick); peridium membranaceous, subglobose (7-8 m.m. diam.), invested below the middle with a rough, friable, bright ochraceous coating, naked above, greyish yellow, delicately puberous, pierced with a roundish ostiolum, margin equal, gleba cinnamon. Spores subglobose (5-6  $\mu$  diam.), ferruginous yellow, flocci sparingly forked, hyaline.

On branches? Victoria.

#### GENUS 20. **BATTARREA.** *Pers. Syn.* 129.

Peridium composed of two membranes, volviform, dehiscing in lobes, distinct from the ascending receptacle, which is stipitate, pileate, pulverulent above, membrane of the interior peridium when broken, calyptrate. Subterranean peridium rooting.

- 1242. *Battarrea phalloides*.** *Dicks. Pers. Syn.* 129, t. 3, f. 1. *Sacc. Syll.* VII., 195.

Volva ovate, bicorticate, whitish, replete with mucus, stem cylindrical, a little attenuated towards each end, straight, fleshy, replete with mucilage, at first short, afterwards quickly elongated upwards; peridium campanulate, smooth and even below, above

covered with a thick, powdery, brown stratum, which is a portion of the ruptured volva, like a calyptra. Spores brown ( $6\ \mu$ , minutely warted).

In sandy soil. Murchison River. Lake Albacutya. (Fig. 114.)

**1243. *Battarrea Stevenii*.** *Lib. Fr. Myc. Eur.* III., 7. *Sacc. Syll.* VII., 196.

Stem ventricose, whole surface covered with scales formed by the laceration of the cortex, hollow within, composed of shining, parallel, silky fibres, with a central medulla in the median cavity; peridium somewhat plane, elevated in the middle, coriaceous, thin, scarcely spongy, white below and even, cellular above, brownish-yellow and powdery; spores very copious, diaphanous, of the same colour, smooth,  $5-6\ \mu$  diam.

On sandy soil. W. Australia.

**1244. *Battarrea Muelleri*.** *Kalch. Grev.* x., p. 3. *Sacc. Syll.* VII., 199.

Wholly white, at length ferruginous from the scattered spores; peridium campanulate-mitrate, seated on a solid, very long stem, which is slightly thickened above, clad with paleaceous scales; scales somewhat imbricated, linear-lanceolate, directed downwards; spores globose, warted,  $4\ \mu$  diam., mixed sparingly with short, fragile, spiral fibres, pure ferruginous.

On the ground. S. Australia.

**1245. *Battarrea Tepperiana*.** *Ludw. Bot. Centr.* 1889, 337.

Membrane of the interior peridium regularly ruptured, campanulate, hood-like (3 c.m. broad); stem very long (26 c.m.), thickened upwards, woody, hollow within, pallid fibres from the pileus decurrent through the whole cavity, stem in the upper part torn into large membranaceous scales, in the lower part invested with linear-lanceolate scales, directed downwards, externally and internally brown; spores globose, brown, scarcely warted ( $5-5\frac{3}{4}\ \mu$  diam.), capillitium threads spiral, few ( $5\frac{1}{2}-6\ \mu$  diam.).

On sandy soil. Victoria.

#### GENUS 21. **CALOSTOMA.** *Desv.*

Exoperidium continuous, eventually irregularly ruptured; endoperidium furnished with an apical toothed ostium, spore sac when young filling the endoperidium, afterwards contracting towards the apex, and remaining attached to the teeth of the ostium; stem composed of agglutinated cord-like strands, forming irregular reticulations or lacunæ=*Mitremyces*, Nees.

**1246. *Calostoma lurida*.** *Berk. Hook. Journ.* 1845, p. 65. *Mass. Mon. Cal. t.* 3, f. 19. *Sacc. Syll.* VII., 205.

Exoperidium breaking up early into small blackish granules, which remain attached to the ochraceous, subglobose endoperidium (1 c.m. diam.); ostium black internally, as well as the margin of the 4-5 teeth; spore-sac pale ochre or whitish; spores elliptic-

oblong, smooth, pallid,  $16-20 \times 7-9 \mu$ , stem-like base, short, brown, irregularly lacunose (1 c.m. long).

On sandy soil. W. Australia.

- 1247. *Calostoma fusca*.** Berk. Ann. Nat. Hist. III., p. 325.  
Mass. Mon. t. 3, f. 24. Sacc. Syll. VII., 206.

Simple or caespitose; exoperidium dark brown externally, dingy red within, endoperidium pale brown, subglobose ( $1-1\frac{1}{2}$  c.m. diam.), ostiolum vermilion, teeth erect, 4-6, forming an umbo before expansion, spore-sac white; spores elliptic-oblong, minutely verruculose, pallid, stem-like base stout, elongated (2-3 c.m.), brown, costate, lacunose (1 c.m. thick).

On the ground, etc. Victoria. Lake Muir. Tasmania. (Fig. 115.)

- 1248. *Calostoma viridis*.** Berk. Hook. Journ. 1851, 201.  
Mass. Mon. Cal. t. 3, f. 29. Sacc. Syll. VII., 207.

Exoperidium in the form of dingy green irregular scales, adhering to the globose, pale green endoperidium (2 c.m. diam.), ostiolum vermilion, teeth 5-7, subacute, erect, and forming a cone before expansion, spore-sac pale; spores globose, closely tuberculose, very pale ochre,  $13-15 \mu$  diam.; stem-like base stout, greenish, irregularly lacunose ( $2 \times 1-1\frac{1}{2}$  c.m.).

On the ground, etc. Victoria.

- 1249. *Calostoma aeruginosa*.** Mass. Grev. XIX., 96.

Exoperidium even, becoming broken up into small, irregular and verdigris-green squamules; endoperidium subglobose, dingy green,  $1 \times 1\frac{1}{2}$  c.m. diam., ostiolum red inside, margins of the 5 sub-erect, acute teeth, orange; spore-sac pale; spores elliptical, warted, pale yellow,  $12 \times 6 \mu$ ; stem-like base irregularly lacunose, dirty brown, 4-6 c.m. long.

On the ground. Victoria.

GENUS 22. **GEASTER.** Mich. Nova. Pl. 220.

Peridium double, persistent, exterior corticate, splitting in a stellate manner, distinct from the interior, which is papery, dehiscing at the apex; capillitium lax, adnate to the peridium on all sides; spores interspersed.

- 1250. *Geaster tenuipes*.** Berk. Fl. Tasm. II., 264, t. 183, f. 9. Sacc. Syll. VII., 218.

Outer peridium soft, papery, pallid umber, even, laciniae about 7, acute, inner peridium on a long pedicel, globose, dark brown, even, furnished at the base with radiating furrows, peristome girt by a circular depression, conical, plicato-sulcate, capillitium formed of fuliginous flocci, 4-6  $\mu$  broad, columella conical; spores globose, muriculate,  $4\frac{1}{2}-5 \mu$  diam., dingy brown.

On the ground. Tasmania.

- 1251. *Geaster striatus*.** DCand. Fl. Fr. II., 267. Fr. Syst. Myc. III., 13. Sacc. Syll. VII., 222.

Outer peridium often multifid beyond the middle, laciniae up to 8, nearly equal, acuminate, between coriaceous and membranaceous,

flattened, or at length subrevolute, even and brown within, inner peridium globose, subpedicellate, nearly sessile, umber, at first punctulate or even; peristome conical, elevated, and prominent, sulcate-striate; capillitium pallid brown, rather lax; spores globose, warted,  $3\frac{1}{2}$ -5  $\mu$  diam., brown.

On the ground. Victoria. W. Australia. Queensland.

**1252. *Geaster striatulus*.** *Kalch. Grer.* ix., 3. *Sacc. Syll.* vii., 224.

Small, outer peridium with few lobes, subcoriaceous, laciniae to 6, slightly revolute, externally furfuraceous, internally smooth, umber or tawny ferruginous; inner peridium rather conically globose, subsessile, even, becoming pale, papery; peristome conical, prominent, sulcate; capillitium cinereous, tawny; spores globose, 5  $\mu$  diam., brownish.

On the ground. S. Australia. Queensland.

**1253. *Geaster Drummondii*.** *Berk. Dec.* 58, t. 1, f. 4. *Sacc. Syll.* vii., 225.

Outer peridium simple, rigid, flattened, many-lobed, brown within (1 in. diam.), laciniae mostly 8, nearly equal, acute; inner peridium globose, delicately rough, sessile, pallid; disc plane; peristome conical, plicate, capillitium brown; spores of the same colour.

On the ground. W. Australia. Victoria.

**1254. *Geaster Readeri*.** *Cke. & Mass. Grer.* xvi., 73. *Sacc. Syll.* vii., 1592.

Outer peridium thin, cut into 7-9 lobes; laciniae acutely triangular, unequal, umber within; inner peridium somewhat stipitate, globose, thin, ochraceous umber, peristome fimbriate (not circumscribed), scarcely prominent; spores and capillitium dark umber; flocci simple, pallid, attenuated at the apex, thicker than the spores; spores globose, even, tawny, 3  $\mu$  diam.

On the ground. Victoria. N.S. Wales. (Fig. 116.)

**1255. *Geaster subiculosus*.** *Cke. & Mass. Grer.* 1887, p. 97. *Sacc. Syll.* vii., 228.

Gregarious, broadly obovate, springing from an effused white subiculum; outer peridium mealy, wood-colour, many lobed, laciniae mostly acute, rather rigid, at length reflexed; inner peridium darker, sessile, globose, even; peristome slightly umbonate, fimbriate, capillitium and spores dark-umber; flocci flexuous, simple, variable, attenuated; spores globose, even, 4  $\mu$  diam.

On rotten wood. Queensland.

**1256. *Geaster lignicola*.** *Berk. Linn. Journ.* xviii., 386. *Sacc. Syll.* vii., 229.

Outer peridium tomentose, granulate, pallid, irregularly ruptured; inner peridium brown; peristome fimbriate, capillitium tawny.

On trunks. Queensland.

- 1257. *Geaster minimus.*** *Schwein. Syn. Car. No. 327.*  
*Sacc. Syll. VII., 232. Fr. Syst. Myc. III., 16.*

Outer peridium for the most part 7-9 lobed; laciniae elegantly revolute from the base, where touching the ground becoming tawny, white beneath; inner peridium shortly but distinctly pedicellate, of the size of a pea, plano-ovate at the base, white, smooth, peristome flattened-conical, cilia connected, at length revolute, and distinct at the apex; capillitium tawny-brown, formed of yellowish flocci, 2-3  $\mu$  broad, columellae short; spores globose, echinulate,  $3\frac{1}{2}$ -4 $\frac{1}{2}$   $\mu$ , dingy.

On moist clay soil. N.S.Wales. Victoria. Queensland. W. Australia. S. Australia.

- 1258. *Geaster fimbriatus.*** *Fries Sys. Myc. III., 16.*  
 = *Geaster Novae Hollandicus. Müll. Sacc. Syll. VII., 238.*

Outer peridium simple, 5-15 lobed, flattened, flaccid, upper stratum deciduous, externally tawny brown; inner peridium subglobose, sessile, soft and flaccid, even, without a paler circle, whitish-yellow, or umber, peristome indeterminate, hairy, fimbriate, capillitium brown, formed of yellowish flocci,  $3\frac{1}{2}$ -4 $\frac{1}{2}$   $\mu$  broad; spores globose, even, or faintly verruculose, 3-3 $\frac{1}{2}$   $\mu$ , sooty brown.

On grassy spots. S. Australia. Victoria. Queensland. Tasmania.

- 1259. *Geaster australis.*** *Berk. in Fl. Tasm. II., 275, t. 183, f. 10.*

Outer peridium coriaceous, rigid, cut to the middle in 8-10 lobes; laciniae ovate, revolute, violet within, with the internal stratum reticulately veined; inner peridium subglobose, sessile, pallid umber; peristome plano-conical, at length torn and dentate; capillitium broad, brownish; spores globose, olive-brown, even, 3  $\mu$  diam.

On the ground. King George's Sound. Tasmania.

- 1260. *Geaster vittatus.*** *Kalch. Gast. Nori. 10, t. 5, f. 2.*  
*Grev. IX., p. 3. Sacc. Syll. VII., 242.*

Outer peridium between membranaceous and coriaceous, fornicate, cut into about 8 regular laciniae, which are ovate, much acuminate, outer surface nearly smooth, tan colour, longitudinally cracked as if with white channels, inner stratum fleshy, thin, continuous, not rimose, cinereous brown; inner peridium globose, sessile, peristome broadly conical, fimbriately ciliate, tawny; spores globose, finely echinulate, 3-3 $\frac{1}{2}$   $\mu$ , olive grey.

On the ground.

- 1261. *Geaster saccatus.*** *Fries Sys. Myc. III., 16. Sacc. Syll. VII., 245.*

Outer peridium cut into 6-9 lobes, thin, soft, flaccid; laciniae membranaceous, equal, spreading, narrowed from the base, when dry longitudinally revolute, and twisted at the apex, entire at the base, enclosing the inner peridium in a cup; inner peridium

globose, collapsed, naked, pallid, sessile, peristome acute, flocculose, fimbriate or silky, seated on a broad determinate orbicular circle; capillitium of filiform threads ( $4-5\ \mu$  diam.), pale fuliginous; spores globose, minutely guttulate and echinulate,  $2\frac{1}{2}-3\ \mu$ , fuliginous, nearly hyaline.

On the ground. Queensland. N.S.Wales. Tasmania. W. Australia.

**1262. Geaster lageniformis.** Vitt. *Lycop.* 160, t. 1, f. 2.  
*Sacc. Syll.* VII., 246.

Outer peridium cut nearly to the middle in 6-9 lobes; laciniae revolute from the broadly saccate base, enclosing the inner peridium in a cup, very long, narrowed at the point, then flaccid, and twisted at the apex, inner stratum waxy, soft, fragile, pallid flesh-colour, external stratum scarred by longitudinal whitish lines; inner peridium subspherical, sessile, soft, membranaceous, flaccid, not shining, peristome plano-conical, rugulose, striate, rather silky, girt by an orbicular disc; capillitium lax, adnate to the walls and columella, which latter is clavate. Spores sphaeroid, granulate, even,  $2\frac{1}{2}-3\ \mu$  diam., yellowish-olive.

On the ground. Queensland.

**1263. Geaster Speggazianus.** Toni. *Sacc. Syll.* VII., 724.

Outer peridium split into 8-16 stellate narrowly involute laciniae, base saccate. Inner peridium globose, sessile, membranaceous, or rather cartilaginous, tough, gilvous; mouth acutely umbonate, penicillate, silky, and rather fimbriate, darker, indeterminate, gleba brown, rather sooty, columella very short, scarcely distinct. Spores globose, rough, dingy olive (about  $5\ \mu$  diam.).

On the ground. Queensland. Victoria.

**1264. Geaster floriformis.** Vitt. *Lycop.* 167, t. 1, f. 5.  
*Sacc. Syll.* VII., 248.

Outer peridium cut into 5-8 lobes, which are elegantly revolute, and rather thin. Laciniae straight, sublanceolate, inner stratum thin, between waxy and cartilaginous, dingy flesh-colour, hygrometrical, external stratum thin, whitish, rather shining, beautifully fibrous; inner peridium ovate-oblong, papery, sessile, greyish-white, shining; peristome minute, papillaeform, not determinate; capillitium lax, adnate to the columella and peridium, composed of pallid yellow threads,  $6-7\ \mu$  broad. Columella thin, compressed, filiform. Spores globose, echinulate,  $3\frac{1}{2}-4\ \mu$  diam., brownish.

On the ground. Victoria. Queensland.

**1265. Geaster pusillus.** Fries *Pl. Priess.* II., 139. *Sacc. Syll.* VII., 249.

Outer peridium splitting in eight lobes, laciniae flattened, involute when dry, flaccid; inner peridium globose, sessile, even, becoming whitish; peristome papillate and prominent. Spores and flocci dark fuliginous.

On sandy soil. W. Australia.



- 1266. *Geaster rufescens*.** *Pers. Syn.* 134. *Sacc. Syll.* VII., 253. = *G. Guilfoylei*, *Muell. in Herb. Berk. Sacc.* 1593.

Outer peridium rigid, cut into about six lobes; laciniae at length revolute, rufescent; inner peridium at first saccately enclosed, subovate, sessile, even, pallid; peristome determinate, dentate; capillitium brownish; columella subglobose, small. Spores sphaeroidal, even or delicately granulate,  $3-4\frac{1}{2}$   $\mu$  diam., brownish.

On the ground. N.S.Wales. W. Australia.

- 1267. *Geaster lugubris*.** *Kalch. Gast.* 10, t. 5, f. 3. *Sacc. Syll.* 255.

Outer peridium cut into 7-8 narrow lanceolate teeth, sometimes bifid at the apex, with a thin continuous or scarcely cracking inner black stratum; inner peridium globose, depressed, umbilicate base sessile, nearly smooth, clay colour, then brownish, white at the vertex, mouth a little prominent, delicately fibrillose, falling away with an irregular pore; capillitium umber; spores globose, warted,  $3\frac{1}{2}$   $\mu$  diam., umber.

On the ground. W. Australia.

- 1268. *Geaster hygrometricus*.** *Pers. Syn.* 135. *Sacc. Syll.* VII., 257.

Outer peridium cut to the base into 7-20 lobes, rarely six. Laciniae rigid, externally hoary, rather woody, becoming smooth; inner stratum thick, almost distinct, persistent, tawny, waxy, cracked when old, externally grey or brownish grey, closely involute when dry. Inner peridium compressed, sessile, a little reticulated or even, brown or grey, at length irregularly torn at the apex, or stellate. Capillitium lax, pallid brown; columella obsolete. Spores globose, warted, 7-10  $\mu$ , reddish brown.

On the ground. W. Australia. Queensland.

- 1269. *Geaster dubius*.** *Berk. Linn. Journ.* XVI., 40. *Sacc. Syll.* VII., 261.

Outer peridium thick, globose, even ( $\frac{1}{2}$  in. diam.), delicately pulverulent, fawn colour, centre depressed, at length open, seated on a stem-like mycelium; flocci tawny; spores globose, small, even.

On the ground. N.S.Wales. Queensland.

- 1270. *Geaster Archeri*.** *Berk. Fl. Tasm.* II., 264, t. 88, f. 9. *Sacc. Syll.* 1590.

Outer peridium cut to the middle into 6-7 lobes; laciniae flaccid, acuminate, revolute; inner peridium globose, purplish umber; peristome elongated, conical, sulcate-plicate, indistinctly margined; capillitium umber; spores globose, rufous-olive, even, 5  $\mu$  diam.

On the ground. Tasmania.

- 1271. *Geaster argenteus*.** *Cooke Grev.* XVII., 75. *Sacc. Syll. Supp.* 1123.

Outer peridium cut into 8-10 teeth (3 c.m. diam.); laciniae narrowly lanceolate, sometimes bifid at the apex, thin, closely

involute when dry, externally whitish and shining, internally dingy-umber; inner peridium globose ( $\frac{1}{2}$  c.m. diam.), sessile, smooth, pallid; mouth torn, dentate; capillitium delicate, hyaline ( $4-6 \mu$  diam.). Spores globose, smooth, pale brown, pellucid ( $4 \mu$  diam.).

On the ground. Victoria.

GENUS 23. **DIPLODERMA.** *Link. Diss.* II., 44.

Peridium double, outer peridium fibrous, becoming woody, closed; inner peridium distinct, cartilaginous; central nucleus woody; capillitium radiating.

**1272. *Diploderma glaucum.*** *Cke. & Mass. Grev.* 1887, 99.  
*Sacc. Syll.* VII., 269.

Subglobose, glaucous grey; outer peridium fragile, soon falling away; inner peridium thin, becoming yellowish, fragile when dry, even, entirely distinct from the outer peridium; capillitium simple, contorted, interwoven; spores glaucous, elliptical, smooth,  $10 \times 5 \mu$ .

On the ground. Seamander River. (Fig. 117.)

**1273. *Diploderma suberosum.*** *Cke. & Mass. Grev.* 1887, 100. *Sacc. Syll.* VII., 270.

Depressedly globose, attenuated below into a short stem; outer peridium corky, persistent, ochraceous; inner peridium cartilaginous, turning black; capillitium simple, straight, radiating, hyaline; spores ochraceous, globose, smooth,  $3-4 \mu$  diam.

On the ground. Queensland.

**1274. *Diploderma pachythrinx.*** *Cke. & Mass. Grev.* XVIII., 50.

Subglobose (2 c.m. diam.). Outer peridium thin, fragile, cinereous; inner peridium subcartilaginous, thin, persistent, pallid; capillitium of thick parallel fibres, composed of thick-walled hyphae, agglutinated in bundles, and radiating from a central woody nucleus to the inner wall of the peridium. Spores pale ochraceous, elliptical, minutely warted ( $9-10 \times 4-5 \mu$ ).

In the ground. Victoria.

**1275. *Diploderma alba.*** *Cke. & Mass. Grev.* XVI., 2.

Subglobose (about 1 in. diam.), pallid, external peridium thin, persistent, internal peridium whitish, cartilaginous. Capillitium simple, radiating, interwoven, central nucleus corky. Spores globose, even, hyaline,  $5 \mu$  diam.

In the ground. Victoria.

**1276. *Diploderma fumosa.*** *Cke. & Mass. Grev.* XVI., 2.

Globose, depressed, white (about 1 in. diam.). External peridium fibrous; internal peridium pallid, fragile; capillitium radiating, interwoven, hyaline, attenuated; spores globose, echinulate, smoke-coloured,  $6-8 \mu$  diam.

In the ground. Victoria. N.S.Wales.

**1277. *Diploderma melasperma.*** *Cke. & Mass. Grev.* xx., 35.

Subglobose (about 1 in. diam.), exoperidium thin, persistent, densely velvety, grey; endoperidium thin, smooth, cinnamon; nucleus small, mass of spores blackish-umber, capillitium dense; spores globose, very minutely warted ( $4\ \mu$  diam.).

On the ground. Victoria.

GENUS 24. **BOVISTA.** *Dill. Nov. Gen.* 76.

Peridium double; outer (cortex) distinct, fragile, deciduous; inner (peridium) persistent, dehiscing by a definite or irregularly torn apical orifice; capillitium springing from every part of the inner surface of the peridium; columella-like sterile base absent.

**1278. *Bovista brunnea.*** *Berk. Fl. N. Zeal.* II., 119. *Sacc. Syll.* VII., 283.

Globose, about an inch across, with a minute apiculate rooting base; cortex thin, evanescent; peridium brownish umber, smooth, shining, dehiscing by a small, irregular slit; mass of spores and capillitium brown; threads thick-walled, brown, branched, tapering; spores smooth, globose, brown,  $4\text{--}5\ \mu$  diam., usually with a long, slender pedicel.

On the ground. N.S.Wales. N. Zealand.

**1279. *Bovista Mulleri.*** *Berk. Linn. Journ.* XVI., 171. *Sacc. Syll.* XIII., 293.

Subglobose (from  $\frac{1}{2}$  to 1 in. diam.), with a short, stout, rooting base; cortex soon broken up into minute, pale, subsistent warts; peridium firm, rather thick, brown; mass of spores and dense capillitium, reddish-brown; threads flaccid, pale, but little branched; spores globose, reddish umber, coarsely spinulose,  $10\text{--}12\ \mu$ , including spines.

On the ground. Queensland. Darling Range.

**1280. *Bovista hyalothrix.*** *Cke. & Mass. Grev. Mar.*, 1888, 73. *Journ. Bot.* XXVI., p. 130.

Subglobose (a little more than an inch in diameter); cortex very thick and fibrous, forming a persistent cupulate base; peridium minutely rugulose, dehiscing by a small apical pore; mass of spores umber; threads colourless, simple, much curled and interwoven (about  $5\text{--}6\ \mu$  diam.). Spores globose, pale brown, coarsely spinulose,  $10\text{--}12\ \mu$  diam.

On the ground. Victoria.

**1281. *Bovista hypogæa.*** *Cke. & Mass. Grev.* xx., 35.

Subterranean, globoso-depressed (about 1 in.), outer cortex persistent, thin, white, silky; inner layer thin, whitish, flexible, dehiscing by a very minute determinate pore at the apex; mass of spores bright yellow-olive; capillitium very dense; spores globose, warted,  $6\text{--}7\ \mu$  diam.

In the ground. Victoria.

**1282. *Bovista anomala*.** *Cke. & Mass. Grev. xviii., p. 6.*

Subglobose ( $\frac{1}{2}$ - $1\frac{1}{2}$  c.m. diam.), depressed, cortex thin, fragile, more or less persistent and regularly cup-shaped at the base, whitish, peridium thick, coriaceous, delicately velvety, dingy ochre, with a cylindrical, rather prominent ostiolum, somewhat silky, seated upon an orbicular, depressed disc; flocci hyaline, nodulose, 3-4  $\mu$  thick; spores globose, warted, very shortly pedicellate, olive, 4-5  $\mu$  diam.

On the ground. Victoria.

**1283. *Bovista olivacea*.** *Cke. & Mass. Journ. Bot. xxvi., 133.*

Globose,  $1\frac{1}{2}$ -2 in. diam., with a short, stout, rooting base, cortex very thin and evanescent, peridium thick, at first soft and pliant like leather, becoming brittle and breaking away in patches, pale ochraceous, at length whitish, mass of spores, and very dense capillitium, bright citrine, then olive, threads thin, flaccid, simple, spores globose, smooth, pale yellow, sometimes pedicellate, 5  $\mu$  diam.

On the ground. Victoria. (Fig. 118.)

**1284. *Bovista cervina*.** *Berk. Fung. Darw. 447. Sacc. Syll. vii., 291.*

Small, globose ( $1$ - $2\frac{1}{2}$  c.m.), peridium membranaceous, pallid fawn coloured, cortex rather rigid; mouth minute and rounded; capillitium and spores of the same colour.

On the ground. Queensland.

GENUS 25. **LYCOPERDON.** *Tourn. Inst. p. 563.*

Peridium membranaceous, single, the subpersistent cortex becoming broken up into warts or spines, dehiscing by a small apical mouth, or the whole of the upper part evanescent; capillitium dense, springing from the more or less developed sterile basal stratum; spores globose or elliptic, externally rough or smooth.

a. *Sterile basal stratum well developed, cellular or compact.*

I. *Spores globose, rough, purple lilac or brown.*

**1285. *Lycoperdon lilacinum*.** *Berk. Mussee Trans. R. M. S. Sacc. Syll. vii., 403.*—*Bovista lilacina, Berk.*

Broadly obovate or turbinate (2-4 in. high, 2-3 in. broad), contracted below into a stout, cellular, stem-like base; peridium thin and evanescent above, dehiscing by a large irregular opening, cortex white, polished, breaking away in papery patches, threads thinner than the diameter of the spores, flaccid, simple, continuous with the convex, cellular, sterile, basal stratum; spores violet, with a tinge of ochre, echinulate, globose, 6  $\mu$  diam.

On the ground. W. Australia. Victoria. Tasmania. N.S. Wales. Queensland.

**1286. *Lycoperdon violascens*.** *Cooke & Mass. Trans. R. M. S. t. xiii., f. 21-23. Sacc. Syll. vii., No. 1607.*

Globose, about  $1\frac{1}{2}$  in. across, sessile, sometimes rather plicate below, and terminating in a short, slender root; peridium papy-

raceous, persistent, at first covered with minute, granular warts, becoming smooth and shining, persistently white, dehiscing above by a large, irregular opening, threads variable in thickness, often nodulose, tapering free from the large convex, cellular, sterile base; spores lilac, globose, minutely warted,  $6\ \mu$  diam.

On the ground. Gembrook Range. (Fig. 119.)

II. *Spores globose, rough, olive, or yellow.*

- 1287. *Lycoperdon bovistoides*.** *Sacc. Bull. Soc. Myc. Fr.* 1889, 116, t. 14, f. 5.

Peridium sessile, adnate by a broad base, globose, then depressed, membranaceous, yellowish, sterile base distinct, yellow, rather compact; spores spherical, loosely warted ( $5-7\ \mu$  diam.), ochraceous, then sooty; flocci nearly hyaline ( $4\ \mu$  thick), contorted, sometimes shortly furcate.

On the ground. Victoria.

III. *Spores globose, smooth, purple, lilac, or brown.*

- 1288. *Lycoperdon natalense*.** *Cke. & Mass. in Mass. Mon. Lyc. p. 9. Sacc. Syll. VII., 1610.*

Globose, sessile ( $\frac{1}{2}-\frac{2}{3}$  in. diam.), passing abruptly into a short, tapering root; peridium thick, minutely warted, becoming smooth; mouth small, irregularly torn; capillitium dense, free from the well-developed, convex, cellular, sterile base, threads very thick, firm, flexuous, simple; spores olive, with a tinge of purple, globose, smooth ( $3\ \mu$  diam.).

On the ground. Victoria.

IV. *Spores globose, smooth, olive, or yellow.*

- 1289. *Lycoperdon gemmatum*.** *Batsch. Elen. 147. Sacc. Syll. VII., 320.*

Stipitate, subglobose (1-2 in. diam.), depressed above, or lens-shaped, obtuse, with prominent spinose warts of various sizes, which eventually fall off, leaving the surface smooth and shining, dehiscing by a small opening; stem stout, tapering downwards; capillitium continuous with the well-developed, cellular, sterile base, threads lax, rarely branching, axils acute, tapering; spores olivaceous, umber, globose, smooth,  $4\ \mu$  diam.

On the ground. W. Australia. N.S.Wales. Queensland. Tasmania.

- 1290. *Lycoperdon Colensoi*.** *Cooke & Mass. Trans. R. M. S. t. XII., f. 1-3. Sacc. Syll. VII., 1612.*

Subcylindrical ( $1\frac{1}{2}-2\frac{1}{2}$  in. high,  $\frac{3}{4}$  in. across); peridium thin, collapsing, dehiscing by a small, apical, torn mouth above, with scattered, spinose warts, which become smaller, shorter, and more crowded downwards, ochraceous when dry; capillitium dense, threads thicker than diameter of the spores, flaccid, basal sterile stratum well developed, very cellular; spores olive-brown, smooth, globose,  $4\ \mu$  diam.

On the ground. New Zealand.

- 1291. *Lycoperdon pyriforme*.** *Schæff. Icon. t. 185. Sacc. Syll. VII., 359. Fries Syst. Myc. III., 29.*

Pyriform, membranaceous (1-3 in. high), rather umbonate, dehiscing by a small, torn mouth, covered with minute, pointed warts, becoming smooth, root of numerous white, long, branching fibres, threads thicker than the spores, branched, continuous with the slightly cellular, sterile base, forming a columella; spores olive, smooth, globose, 4  $\mu$  diam.

On stumps or on the soil. Victoria. N.S. Wales. Queensland. Tasmania.

- 1292. *Lycoperdon glabrescens*.** *Berk. Fl. Tasm. II., 226. Sacc. Syll. VII., 386.*

Subhemispherical (1½ in. diam.), mouth conical, plicate below, at first covered with slender, floccose spines, becoming glabrous; stem short, stout, tinged violet within; capillitium dense, continuous with the cellular, sterile base, threads firm, about as thick as the spores, often nodulose, branching, axils rounded, tapering; spores dark cinnamon, tinged olive, smooth, globose, often pedicellate, 5-6  $\mu$  diam.

On the ground. Victoria. Tasmania.

- 1293. *Lycoperdon bovista*.** *Lin. Sacc. Syll. VII., 324. = L. giganteum, Batsch. Elen. f. 165.*

Peridium subsphaeroid, sessile (12-100 c.m. diam., or more), fragile above, breaking in patches, and at length evanescent, at first greyish-white, then yellowish-white, at length olive-grey; cortex floccose, distinct, capillitium scarce, evanescent; spores sphaeroid, even, olive, then brownish (4  $\mu$  diam.).

On the ground. Esculent. Queensland.

- 1294. *Lycoperdon Fontanesii*.** *DR. & Lev. Fl. Alg. 381, t. 22. Sacc. Syll. VII., 344.*

Peridium globose or broadly ovate (from the size of an apple to that of a child's head), passing into a narrow, strongly plicate base, whitish, becoming reddish ochre, thick and leathery, areolate or broken up into soft, elongated warts, fragile, and breaking away in patches above; root stout, elongated; capillitium dense, threads thicker than the spores, rarely branched, soon separating from the dense minutely cellular, purple-brown, prominent sterile base; spores ferruginous olive, globose, smooth, often pedicellate, 4  $\mu$  diam.

On the ground. N. Zealand.

- 1295. *Lycoperdon cælatum*.** *Bull. Champ. t. 430. Sacc. Syll. VII., 352. Fr. Syst. Myc. III., 32.*

Peridium sessile or stipitate (1-4 in. diameter), subglobose or depressed, cortex pale creamy ochre, very thin, minutely furfuraceous, breaking away in areolæ, inner coat thicker, smooth, ashy grey; capillitium ochraceous olive, threads frequently branched, axils rounded, thicker than the spires in the thickest parts, taper-

ing, evanescent, sterile basal portion well developed, cellular, dense, free from capillitium; spores dirty olive, globose, smooth,  $5\ \mu$  diam., frequently pedicellate.

Amongst grass. Victoria. N.S.Wales. Queensland.

**1296. *Lycoperdon Cookei*.** *Mass. Trans. R. M. S. t. 13, f. 24. Sacc. Syll. VII., 1615.*

Hemispherical or globose ( $\frac{1}{2}$  to  $\frac{3}{4}$  in. across), abruptly contracted into a short, thick, stem-like base, smoky brown above, white below, minutely areolato-furfuraceous, dehiscing by a small, irregular mouth; capillitium continuous with the well-developed, whitish, cellular sterile base, threads varying in thickness, simple, firm; spores bright citrine, then olivaceous umber, globose, smooth, sometimes stipitate,  $4\ \mu$  diam.

On the ground. N.S.Wales.

V. *Spores elliptical or subglobose.*

**1297. *Lycoperdon Sinclairi*.** *Berk. in Herb. Sacc. Syll. VII., 1616.*

Globose (3 in. or more diam.), produced into a short, thick, rooting base, peridium smooth, almost polished, cortex rufous, broken into adnate patches by growth, and showing pale ochre between; base reticulately plicate, upper portion evanescent, forming a large aperture with torn edge; capillitium separating from the copious, slightly cellular sterile base, threads branched; spores bright olive, smooth, broadly obovate, frequently pedicellate,  $5 \times 4\ \mu$ .

On the ground. New Zealand.

b. *Sterile basal stratum rudimentary or obsolete.*

I. *Spores globose, rough, purple, lilac or brown.*

None.

II. *Spores globose, rough, olive or yellow.*

None.

III. *Spores globose, smooth, purple, lilac or brown.*

**1298. *Lycoperdon australe*.** *Berk. Fl. Tasm. II., 266. Sacc. Syll. VII., 387.*

Sessile, globoso-depressed (1 in. or more diam.), densely covered with small pointed warts, which are smaller and granular towards the base, eventually disappearing and leaving the surface smooth and shining, dehiscing by a small raised mouth, root long, tapering, capillitium very dense, persistent, threads very variable in thickness, branched, axils rather acute, scanty, sterile base cellular; spores umber, globose, smooth, generally pedicellate,  $5\ \mu$  diam.

In sandy, turfy meadows. S. Australia. W. Australia. Victoria. N.S.Wales. Tasmania. Queensland.

## IV. Spores globose, smooth, olive or yellow.

- 1299. *Lycoperdon stellatum*.** Cke. & Mass. Trans. R. M. S., t. XII., f. 10-12. Sacc. Syll. VII., 333.

Sessile, subglobose ( $1\frac{1}{2}$  in. across), peridium thin, flaccid, at first covered with stout, stellate, spinose warts, which break away in patches, leaving a smooth surface, mouth minute, torn; threads firm, rarely branched, equal to spores in thickness, continuous with scanty, floccose, sterile base; spores dirty olive, smooth, globose,  $5\ \mu$  diam.

On the ground. W. Australia.

- 1300. *Lycoperdon substellatum*.** Berk. in Mass. Mon. p. 20. Sacc. Syll. VII., 1621.

Globose, sessile, whitish ( $\frac{1}{4}$ - $\frac{1}{2}$  in. diam.), covered with delicate flocculose spines, which become smaller downwards; threads of capillitium collapsing, simple; sterile base obsolete; spores ochraceous, globose, smooth ( $3\ \mu$  diam.).

On rotten wood, etc. Queensland.

- 1301. *Lycoperdon coprophilum*.** Cke. & Mass. in Grev.

Globose, sessile ( $\frac{1}{2}$ -1 in. across), whitish, covered with delicate persistent spines, becoming smaller downwards; threads of capillitium very dense, once, twice, or three times dichotomous, gradually attenuated to the ends, thicker than the spores; sterile base obsolete, internal mass olive; spores globose, smooth, shortly stipitate,  $4\ \mu$  diam.; mycelium branched, cord-like, white.

On dung. Queensland.

- 1302. *Lycoperdon microspermum*.** Berk. Hook. Journ. VI., 172. Sacc. Syll. VII., 327.

Subglobose ( $\frac{1}{2}$ -1 in. across), obtuse, rooting, wholly flaccid, persistent, dehiscing by a minute round mouth, at first rufous-brown, indistinctly cracked, rough with acute scales, paler, smooth above; sterile base small, capillitium uniform; columella obsolete; spores very minute, globose, olive, even, rarely pedicellate.

On the ground. New Zealand.

- 1303. *Lycoperdon dermoxanthum*.** Vitt. Mon. 178. = Bovista, Sacc. Syll. VII., 296.

Peridium very thin and flaccid ( $\frac{1}{2}$ - $1\frac{1}{2}$  in. diam.), persistent, sessile, irregularly globose, base more or less plicate, root rather long, slender; minutely furfuraceous, dehiscing by a minute opening, bright yellow, becoming brownish; threads of capillitium very slender, lax; sterile portion obsolete; spores ochraceous-olive, globose, smooth ( $3$ - $4\ \mu$ ).

In grassy places. Victoria.

- 1304. *Lycoperdon reticulatum*.** Berk. Mass. Trans. R. M. S. Sacc. Syll. VII., 330.

Peridium globose, or broadly obovate (about  $\frac{3}{4}$  in. diam.), with slightly raised reticulations, which eventually disappear, leaving a



polished surface; capillitium persistent, threads slender, flaccid, barren stratum scanty, cellular; spores pale yellowish grey, globose, smooth,  $4\ \mu$  diam.

On the ground. Australia. N. Zealand.

**1305. *Lycoperdon tephrum.*** Berk. Mass. Trans. R. M. S. Sacc. Syll. VII., 437.

Sessile, globose ( $\frac{1}{2}$ - $\frac{3}{4}$  in. across), peridium thick and rigid, brown, minutely velvety; capillitium scanty, threads delicate, sterile base obsolete; spores pale ochraceous olive, globose, smooth,  $3$ - $4\ \mu$  diam.

On ? Queensland.

**1306. *Lycoperdon pusillum.*** Fr. Syst. Myc. III., 33. Sacc. Syll. VII., 325.

Peridium subglobose, sometimes slightly attenuated below ( $\frac{1}{4}$ - $\frac{2}{3}$  in. diam.), flaccid, persistent, with minute, adpressed, scurfy squamules, becoming smooth, dehiscing by a minute irregular apical pore, pale olivaceous ochre, furnished with a cord-like root; capillitium dense, threads much branched, axils well rounded, lax, flexuous, sterile, base obsolete; spores olivaceous ochre, globose, smooth,  $4\ \mu$  diam.

On the ground. W. Australia. Queensland. N.S. Wales. King George's Sound.

V. Spores elliptical or subglobose.

None.

VI. Of uncertain place.

**1307. *Lycoperdon mundula.*** Kalch. Grv. IX., p. 3. Sacc. Syll. VII., 286.

Peridium floccose, becoming smooth, white, size of a hazel nut; spores and capillitium carneo-rufous,  $4\ \mu$  diam. (similar to *L. pusillum*, but colour of spores different).

On the ground. Victoria.

c. Species imperfectly known.

I. Spores purple, lilac, or brown.

**1308. *Lycoperdon novæ zealandiæ.*** Lev. Ann. Ser. Nat. 1846, 164. Sacc. Syll. VII., 372.

Peridium globose, sessile (2-3 in. diam.), papyraceous, evanescent above, and opening by a very large mouth, at first covered with minute, white, shining warts, lacunose-plicate below, flesh and smooth spores violet.

On the ground. New Zealand.

II. Spores olive or yellow.

**1309. *Lycoperdon Gunnii.*** Berk. Fl. Tasm. II., 265. Sacc. Syll. VII., 341.

Sessile, subglobose (1-2 in. diam.), with very minute stellate warts. Columella short; spores bright olive, globose, with long pedicels ( $\frac{1}{1000}$  in.).

In pastures. Victoria. Tasmania.

GENUS 26. **SCLERODERMA.** *Pers. Syn. p. 150.*

Peridium firm, corticate, dehiscing irregularly; flocci adhering everywhere to the peridium, and forming minute cells, in which are produced the glomerules of spores, without peridiola; rooting, but without a distinct stem.

**1310. Scleroderma geaster.** *Fr. Syst. Myc. III., 460. Sacc. Syll. VII., 459.*

Sessile, subglobose, growing pale, peridium dehiscing at the apex in stellate laciniae, gleba dingy blue, then purplish; spores becoming brownish, coarsely warted, 14-15  $\mu$  diam.

On the ground. W. Australia. S. Australia. Victoria. N.S.Wales. Queensland. S.W. Australia. Tasmania.

**1311. Scleroderma bovista.** *Fr. Syst. Myc. III., 40. Sacc. Syll. VII., 446.*

Peridium obovoid or spheroid, substipitate, or possibly with a rooting base, verrucose, turning yellow, vertex areolate, tessellate, or cracked, then irregularly dehiscient; cortex evanescent; gleba dingy coloured; flocci yellow; spores spheroid, rough, olive, 14-15  $\mu$  diam.

On sandy ground. Victoria. N.S.Wales. Queensland.

**1312. Scleroderma vulgare.** *Fr. Syst. Myc. III., 46. Sacc. Syll. VII., 445.*

Subsessile, deformed, peridium corky, hard, citrine, then rufescent, growing pale with age, indefinitely and irregularly dehiscient, externally often areolate or squamose, or at first verrucose; gleba at first whitish, soon dark blue or black, marbled with the white flocci; spores globose, verrucose, smoky rufous, 12  $\mu$  diam.

On the ground. W. Australia. Victoria. N.S.Wales. Queensland. S.W. Australia. Tasmania.

**1313. Scleroderma verrucosum.** *Bull. Champ. t. 24. Sacc. Syll. VII., 447.*

Peridium rounded, at first hard, rigid, then fragile, dehiscing determinately at the apex, covered with an adnate persistent cortex, smooth, rather verrucose, areolate, or even, dingy yellowish, produced downwards into a short stipitiform base, or sometimes sessile; gleba dark purple, flocci lax, greyish tawny; spores brownish, then pale purplish, globose, rough, 12  $\mu$  diam.

On the ground. Queensland.

**1314. Scleroderma pandanaceum.** *Müll. Linn. Journ. XVI., 171. Sacc. Syll. VII., 454.*

Globose, sessile, yellow, even at the base, tessellate above (about  $1\frac{1}{2}$  in. across); flocci dingy yellow; spores globose, 10  $\mu$  diam.

On the ground. Queensland.

**1315. Scleroderma aurea.** *Massee Grece. XVIII., 26.*

Peridium globose, thick, smooth, or minutely verruculose, yellowish-olive, with the flesh bright yellow, tapering below into a

very short, stem-like base, running into a dense mass of branched, cord-like, bright yellow mycelium. Capillitium yellowish olive, dense, elastic; spores umber in the mass, with an olive tinge, globose, smooth,  $5\ \mu$  diam.

On the ground. New Guinea.

**1316. *Scleroderma australe*.** *Mussee Grev.* XVIII., 26.

Subglobose, sessile, subplicate below. Peridium thick, almost even, externally minutely furfuraceous or felty, dirty-ochre, with a rooting base, which is short, abrupt, and fibrous; internally with very indistinct areolæ, mass of spores (without definite capillitium), purple-brown; spores globose, sparsely and minutely verruculose,  $6-7\ \mu$ .

On soil. Queensland.

**1317. *Scleroderma umbrina*.** *Cke. & Mass. Grev.* XIX., 45.

Stipitate, peridium globose ( $2\frac{1}{2}-3$  c.m. diam.), coarsely rugulose below (when dry), very thin, fragile, and perfectly glabrous above, breaking away irregularly, dirty pale ochre, darkest below; stem equal ( $2\frac{1}{2}$  c.m. long,  $\frac{1}{2}$  c.m. or more thick), coarsely and irregularly furrowed (when dry), dark brown, passing downwards into a dense bulbous mass of intricate mycelium; mass of gleba dark umber-brown; spores globose, echinulate, brown,  $10\ \mu$  diam.; dissepiments almost obsolete at maturity.

On the ground. Queensland. (Fig. 120.)

*Sub-Genus.* AREOLARIA. *Forq. Champ. Exot.* p. 155.

Peridium stipitate, cracking above in pentagonal areas.

**1318. *Scleroderma (Areolaria) strobilina*.** *Kalch. Grev.* ix., p. 4. *Sacc. Syll.* VII., 481.

Peridium depressedly globose, furnished above with stout angular scales, smooth, pallid, at length dehiscing with a fissure; stem solid, rather woody, naked, dilated above, mass of spores distinct from the stem, cinereous, becoming brownish; spores globose, verrucose, scarcely pellucid,  $5\ \mu$  diam., turning blackish.

On the ground. Queensland.

GENUS 27. **MYCENASTRUM.** *Desv.*

Peridium at first fleshy, then solid, cortex double, the outer thin, breaking into fragments, the inner thick, indurated and persistent, dehiscing in a stellate manner; gleba fleshy, white, then densely tow-like, brown. Threads of capillitium strongly developed, and usually coarsely spinulose.

**1319. *Mycenastrum corium*.** *Desv. Ann. Sci. Nat.* 1842, p. 147. = *Scleroderma corium*. *Sacc. Syll.* VII., 474.

Peridium subglobose, turning whitish, then greyish-brown, even, free, coriaceous, splitting above in a stellate manner; spores globose, echinulate,  $8\ \mu$  diam. Threads thick, spinulose.

On sandy ground. Victoria. Queensland. (Fig. 121.)

- 1320. *Mycenastrum phæotrichum*.** *Berk. Hook. Journ.* II., 418. = *Scleroderma*. *Sacc. Syll.* VII., 461.

Peridium subglobose. Mass of spores and capillitium dark purple brown, threads about  $12\ \mu$  thick, furcate, spinulose, fuliginous; spores globose, acutely warted,  $10\ \mu$  diam., dark brown, opaque.

On ground. W. Australia.

- 1321. *Mycenastrum olivaceum*.** *Cke. & Mass. Grev.* XVI., 33. = *Scleroderma olivacea*. *Sacc. Syll.* VII., 1629.

Peridium subglobose (2-3 in. diam.), sessile, rigid, smooth, even, lead-colour above, whitish below, splitting half-way down into about five acute laciniae; capillitium and mass of spores olive; threads,  $15\text{-}20\ \mu$  thick, with several irregular large branches, furnished throughout with stout spines; spores spherical, minutely warted,  $15\ \mu$  diam.

On the ground. Queensland. N.S. Wales.

GENUS 28. **CASTOREUM.** *Cke. & Mass. Grev.* 1887.

Peridium double, exterior fibrous, produced below into a fibrous rooting stem, interior subcartilaginous; capillitium arachnoid (not radiating), flocci simple, thin, interwoven, adnate to the walls of the peridium; spores fusiform, verrucose, coloured.

- 1322. *Castoreum radicans*.** *Cke. & Mass. Grev.* XV., 100. *Sacc. Syll.* VII., 476.

Fasciculate ( $1\frac{1}{4}$  to  $1\frac{1}{2}$  in. diam.), subglobose, coalescing below in a fibrous stem; outer peridium tawny, persistent, coriaceous; inner peridium subgelatinous, at length horny; capillitium very thin, interwoven, hyaline; spores fusiform, subochraceous, unequally verrucose,  $12 \times 5\text{-}6\ \mu$ .

On the ground. Tasmania. (Fig. 122.)

GENUS 29. **XYLOPODIUM.** *Mont. Fl. Alg.* 390.

Peridium simple, coriaceous, formed of two strata, vertex clad at maturity with thick, broad warts, dehiscing in lobes, stipitate; stem thick and large, fibrous, very hard, woody, flocci adnate to the peridium, at first reticulate, with clavate apices; spores nearly even, rusty brown, pedicellate.

- 1323. *Xylopodium australe*.** *Berk. Linn. Journ.* XVI., 171. *Sacc. Syll.* VII., 479.

Peridium volvate when young (5 c.m.) broad. Stem rooting, broken into scales (8 c.m. long); spores large, echinulate, yellow ( $5\ \mu$  diam.).

On the ground. Victoria. N.S. Wales. S. Australia.

- 1324. *Xylopodium ochroleucum*.** *Cke. & Mass. Grev.* XV., 95. *Sacc. Syll.* VII., 478.

Stipitate; peridium globose (2 in. diam.), verrucose, warts large, pyramidal, persistent; stem erect, firm, thick, indurated, solid, equal (3 in. long,  $\frac{3}{4}$  in. thick), imbricately squamose; capillitium whitish ochre, flocci nearly simple, thin; spores globose,  $8\ \mu$

diam., even, ochrey white, mixed with allantoid sporiform corpuscles.

On the ground. Queensland. (Fig. 123.)

GENUS 30. **FAVILLEA**. *Fr. Fungi Natal* p. 32.

Peridium clavate, simple, without special cortex, membranaceous above and fugitive, very copious; spores agglomerated and intermixed with very thin flocci; capillitium rare, rising from the base of the peridium, which is produced into the contiguous solid stem.

**1325. Favillea argillacea.** *Fr. Fun. Natal* 32. *Sacc. Syll.* VII., 487.

Same characters as the genus.

On the ground. New Holland.

GENUS 31. **POLYSACCUM**. *DeCand.*

Peridium simple, rigid, dehiscing irregularly, filled with numerous small cavities, with rigid walls (peridiola), and containing the spores.

**1326. Polysaccum piscocarpium.** *Fries Syst. Myc.* III., 54. *Sacc. Syll.* VII., 494. Including *P. olivaceum*. *Fries Syst. Myc.* III., 54.

Peridium subglobose, passing downwards into a short stem-like base, smooth, reddish brown, tinged olive. Peridiola large, irregular, angular, 4-5 × 2-3 m.m., yellow; spores spherical, warted, coffee-colour, 9-13  $\mu$  diam.

On the ground in sandy places. W. Australia, Queensland. New Zealand. King George's Sound.

var. **acaule.** *DC. Fl. Fr.* VI., 103.

Without distinct stem. Queensland.

**1327. Polysaccum microcarpum.** *Cke. & Mass. Grev.* XVI., 28. *Sacc. Syll.* VII., 1633.

Peridium subglobose, coarsely tuberculate, ochraceous brown, stout, with a short stem-like base, bright citrine. Peridiola small, angular, about 2 m.m., septa very thin and fragile. Spores spherical, minutely warted, ochraceous, with a tinge of olive, 6-7  $\mu$  diam.

On the ground. Victoria. Queensland.

**1328. Polysaccum crassipes.** *D. Cand. Fl. Fr.* VI., 103. *Sacc. Syll.* VII., 491.

Peridium varying from spherical to clavate or subcylindrical, at first pale ochraceous, becoming darker, 2-4 in. diam.; stem-like base stout, often lacunose (4-6 in. long, 1-2 in. thick). Peridiola minute, oblong or polyhedral, about 2 m.m., golden yellow, then ferruginous. Spores spherical, warted, coffee-colour, 9-12  $\mu$  diam.

Immersed in sand. Victoria. W. Australia.

**1329. *Polysaccum turgidum*.** *Fries Syst. Myc.* III., 53.  
*Sacc. Syll.* VII., 489.

Peridium subcylindrical or clavate, at first covered with an exceedingly fine arachnoid web, then smooth, dark umber, passing into a long, stout, lacunose, stem-like base (4-6 in. long), divided into thick rooting branches, dark umber above, yellowish at base. Peridiola small, 2-3 m.m., rounded. Spores spherical, minutely echinulate, coffee-colour, 7-8  $\mu$  diam.

In sandy soil. W. Australia.

**1330. *Polysaccum tuberosum*.** *Fr. Syst. Myc.* III., 55.  
*Sacc. Syll.* VII., 501.

Peridium subglobose or deformed, with a very short stem-like base, even, smooth; ochraceous, becoming darker, often irregular and depressed, point of attachment basal or lateral. Peridiola large, angular, 3-4 m.m., yellow, becoming brown. Spores globose, warted, dark cinnamon, 9-12  $\mu$ . (*Polysaccum conglomeratum*, *Fr. S. Myc.* III., p. 55, is probably nothing more than a caespitose form of this species.)

On the ground. N.S. Wales.

**1331. *Polysaccum marmoratum*.** *Linn. Journ.* XIII., p. 155.  
*Sacc. Syll.* VII., 499.

Peridium subglobose, tapering into a more or less elongated stem-like base, dirty ochre, marbled with darker patches; peridium 1-2 in. across, stem varying from  $\frac{1}{2}$ -1 $\frac{1}{2}$  in. long; peridiola small, angular, about 1.5-2 m.m.; spores spherical, rough with very fine sinuous raised lines, brown, 7-8  $\mu$ .

On the ground. W. Australia. S. Australia. N.S. Wales. S.W. Australia.

**1332. *Polysaccum confusum*.** *Cooke in Grev.* XVI., p. 29,  
 p. 76. *Sacc. Syll.* VII., 1632.

Peridium subglobose, slightly narrowed below into a short, thick, stem-like base, or pyriform, rugulose, olivaceous-umber, sprinkled with yellow pruina; peridium about 2 in. across; stem  $\frac{1}{2}$  in. long, 1 in. thick; peridiola small, 2-3 m.m., polygonal, dissepiments very thin; spores spherical, smooth, bright ochraceous brown, 5-6  $\mu$ .

On the ground. Victoria. S.W. Australia. (Fig. 124.)

**1333. *Polysaccum australe*.** *Lev. Ann. Sci. Nat. Ser.* 3, v.  
 9, p. 136, pl. 9, f. 3-4. *Sacc. Syll.* VII., 490.

Stem rooting, subcylindrical, even, shining, blackish-brown, dilated into a similarly coloured subglobose tuberculato-arcolated peridium (about 9 c.m. high); peridiola brown, subglobose, near the periphery lentiform, compact; spores fawn-coloured, spherical, smooth.

On the ground. New Holland. Queensland.

**1334. *Polysaccum album*.** *Cke. & Mass. Grev. xx., 36.*

Peridium globose (5-6 c.m. diam.), white, polished and shining, attenuated below into a very short, stout, irregular, stem-like base; peridiola irregularly polyhedral (2-3 m.m. across); spores in the mass yellowish-olive, globose, rather coarsely warted, 9-10  $\mu$  diam.

On the ground. Victoria. Queensland.

*Doubtful.*

**1335. *Polysaccum? degenerans*.** *Fr. Plant. Priess. 159.*  
*Sacc. Syll. vii., 500.*

Clavate, with a rooting stem; peridium simple, obovate, even, ochraceous tan colour, the lower part including peridiola, the upper broken into naked, dirty ochraceous spores mixed with flocci.

On river banks. W. Australia.

GENUS 32. **ARACHNION.** *Schwein. Syn. Car. xiv.*

Peridium subglobose, with a thin evanescent bark, internally corky, irregularly splitting, enclosing numerous adpressed polysporous sporangioles; sporangiole friable, without flocci; spores free, equal.

**1336. *Arachnion Drummondii*.** *Berk. Linn. Journ. xviii., 389.* *Sacc. Syll. vii., 507.*

Globose, a little depressed ( $\frac{1}{2}$  in. diam. or more), pallid; sporangioles ( $\frac{1}{2}$  m.m. diam.); spores 7-8  $\mu$  diam.

Attached to *Agaricus* (*Acetabularia*) *cynopotamia*. W. Australia.

GENUS 33. **PAUROCOTYLIS.** *Berk. Fl. N. Zeal. p. 188.*

Peridium simple, hard, tough; gleba floccose, with a few large flexuous sinuses; spores large, globose, pedicellate.

**1337. *Paurocotylis pila*.** *Berk. Fl. N. Zeal. ii., 188.* *Sacc. Syll. vii., 509.*

Globose, slightly sinuated, bright crimson, somewhat rufous, contracted and waved when dry; peridium hard, thin, rigid, consisting of flocci closely laced into a compact network, trama floccose, consisting of loose membranous bodies, which give rise to pellucid peduncles, each of which bears a large globose spore, of a pale tan colour (20  $\mu$  diam.).

On the ground. New Zealand. (Fig. 125.)

**1338. *Paurocotylis echinosperma*.** *Cooke Grevillea viii., 59.* *Sacc. Syll. vii., 512.*

Depressedly globose, externally tawny flesh colour, marbled within; spores globose, echinulate, 12-14  $\mu$  diam.

On trunks. Victoria.

*Family IV. HYMENOGASTRACEÆ. Vitt.*

Subterranean, subglobose or tuber-like, peridium not open when mature, rarely obsolete; gleba fleshy or gelatinous, putrescent, excavated with numerous hymenial cells, without capillitium; spores stipitate, then free.

**GENUS 34. OCTAVIANIA.** *Vitt. Mon. Tub. p. 15.*

Peridium continuous, or sometimes tessellately cracked, even, rather soft, not separable, produced downwards into a sterile base; gleba continuous with the peridium, multicellular, rather soft, mutable, at length gelatinous; trama byssoid; spores sphaeroid, dark when mature, echinulate.

**1339. Octaviania australiense.** *Berk. = Hydngangium australiense, B. & Br. (?)*.

Irregular, subglobose, elongated, or tuberiform (1-2 c.m.), peridium thin, rugose, ochraceous; gleba paler, cells small; spores globose, echinulate (10-12  $\mu$ ), pale yellowish, hyaline.

Under tea tree. Victoria. (Fig. 126.)

**1340. Octaviania alveolata.** *Cke. & Mass. Grev. xvi., 2.*

Subglobose or irregular ( $\frac{1}{2}$ -1 in. diam.), whitish, then ochraceous, sterile base obsolete, paler within and lacunose; spores globose, alveolate, 10  $\mu$  diam., pale brown.

In the ground. Victoria.

**1341. Octaviania Archeri.** *Berk. Fl. Tasm. 263. Sacc. Syll. 529.*

Obovate, small, with a large sterile base, without fibrils; gleba compact; spores globose, echinulate, 21-22  $\mu$  diam.

On the ground. Tasmania.

**GENUS 35. RHIZOPOGON.** *Fr. Symb. Gast.*

Peridium globose, tuberiform, attached to a tough fibrous mycelium; gleba cellular, rather compact, at first white, then coloured, cells minute, irregular, at first empty; spores elliptic, oblong, 1-2 guttulate, hyaline, pale coloured.

**1342. Rhizopogon luteolus.** *Fr. Symb. Gast. p. 5.*

Peridium deformed, commonly sphaeroid, kidney-shaped or ovoid, fibrils rooting, lax, at first white, then reddish or dingy yellow, becoming yellowish, within livid or greenish-grey; gleba at first white and unchangeable, lacunose, cells rounded and broken, dissepiments narrow, easily broken, basidia linear-oblong, bearing 4-6 spores; spores ellipsoid, pale yellow or nearly hyaline, even, 7-16  $\times$  4-6  $\mu$ .

In sandy soil. Victoria. (Fig. 127.)

**GENUS 36. HYMENOGASTER.** *Vitt. Mon. Tub. 20.*

Peridium fleshy or thin, running down into an absorbing base, gleba fleshy, cells at first empty, radiating or irregular, trama of elongated cells, but not floccose, hence not easily separable; spores ovate, fusiform, or lemon-shaped, mostly papillate, thick, even or rugulose, coloured when mature.



- 1343. *Hymenogaster Klotzschii.*** *Tul. Fungi Hyp. t. 10, f. 12. Sacc. Syll. 560.*

Obovate, fibrillose at the base; peridium membranaceous, whitish, subtomentose, now and then tinged with yellowish spots; cells dirty white, then ochraceous or rufescent, soft, moist; spores  $16 \times 9\frac{1}{2} \mu$ , ovate or elliptic, obtuse at the ends, 4-6 guttulate, even.

In the ground. W. Australia.

- 1344. *Hymenogaster lycoperdineus.*** *Vitt. Mon. Tub. t. 2, f. 5.*

Peridium rounded, deformed, at first white, then brownish, smooth, soft within, paler, gleba soft, elastic, pale sooty brown, cells rather large, irregular, directed in a series from the base to the centre; spores rather numerous, somewhat fusiform,  $19-23 \times 9-11 \mu$ , from sooty brown to nearly hyaline.

On the ground.

- 1345. *Hymenogaster Moselei.*** *B. & Br. Linn. Journ. xvi., 40.*

Subglobose, attenuated at the base, citrine yellow, smooth (about 1 in. diam.); hymenium ochraceous, base distinct, white; spores ovate, attenuated at the apex, pedicellate, even, 1-2 guttulate,  $15 \mu$  diam., hyaline.

On the soil. N.S.Wales. (Fig. 128.)

- GENUS 37. **HYDNANGIUM.** *Wallr. Fl. Borus. vii., 465.*

Peridium fleshy, or rather membranaceous, without sterile base, gleba elastic, solid, mostly bright coloured and multicellular, cells small, unequal, at first empty; spores spherical or elliptic, minute, echinulate, pale or darker coloured.

- 1346. *Hydnangium brisbanensis.*** *Berk. & Br. in Herb.*

Subglobose; peridium thick, dry, rugose, red-brown, gleba pallid ochraceous, cells empty, lax, growing from a basal point; spores globose, minutely echinulate,  $7-8 \mu$  diam.

In the soil. Victoria. Queensland. (Fig. 129.)

- 1347. *Hydnangium tasmanicum.*** *Kalchbr. in Herb.*

Subglobose, 2-5 c.m. diameter; peridium thick, dark brown, angular when dry, sterile base entirely absent, cells of the gleba large, irregularly angular, 1-2 m.m. in diameter, septa thick, ochraceous, not splitting; basidia clavate, tetrasporous, sterigmata short; spores globose, brown, epispore thickly covered with large irregular warts,  $13-14 \mu$  diameter.

On the ground. Tasmania.

- GENUS 38. **GAUTIERIA.** *Vitt. Mon. Tub. 25.*

Peridium not distinct, or none, gleba fleshy, firm, externally and internally cellular, porose or lacunose, internal cells labyrinthiform; spores elliptic, obtuse, longitudinally striate.

- 1348. *Gautieria Drummondii.*** *Berk. in Herb. Berk. 4446.*

Subglobose, small; cells sinuous; spores ellipsoid, with a large nucleus,  $14-15 \times 8$ , hyaline.

In the soil. W. Australia. (Fig. 130.)

**ASCOMYCETÆ.**

Fruit consisting of sporidia, mostly definite, contained in asci, springing from a naked or enclosed stratum of fructifying cells, and forming an hymenium or nucleus.—*Berk. Outl. p. 357.*

Hymenium wholly enclosed within a fleshy peridium.

Subterranean . . . . . *Tuberoideæ.*

Hymenium discoid, soon exposed, substance fleshy . . . *Discomycetæ.*

Hymenium at length more or less exposed by fissure of coriaceous or carbonaceous receptacle . . . *Hysteriaceæ.*

Hymenium enclosed in a minute subglobose perithecium, dehiscing by a pore, or rarely irregularly . . . *Pyrenomycetæ.*

**a. TUBEROIDÆ. Vitt.**

Ascigerous fungi, growing in the ground, very rarely on the surface. Tubers subglobose, indehiscent, fleshy or leathery. Asci 1 to 8 spored. Sporidia continuous.

**GENUS 1. ELAPHOMYCES. Nees.**

Subglobose, fleshy, becoming indurated, covered with two teguments. Gleba at first subfilamentose, then fleshy. Asci globose or obovate, shortly pedicellate. Sporidia at first hyaline, when mature resolved into a dry, opaque powder, even, spiny, or reticulate.

**1349. *Elaphomyces Leveillei.*** *Tul. Ann. Sci. Nat.* xvi., p. 21, t. 1, f. 2, etc. *Sacc. Syll.* 3481.

Rounded or depressed and excavated on both sides, arising from a green, crustaceous mycelium, veil even or minutely mamilliose-granulate, black, basilar wart greenish, cortex whitish, then fuliginous. Spores even, opaque, greenish black, 20-23  $\mu$ .

Under trees. Queensland. (Fig. 132.)

**Family ENDOGONACEÆ.**

Thinly corticate; gleba continuous, destitute of internal cavities. Asci (?) globose-ovoid. Genuine sporidia not seen.

**GENUS 2. ENDOGONE. Link.**

Tubers with a byssoid, fugacious, white cortex, globose, thin, adherent, closed. Gleba solid, of one colour, between granular and waxy, juicy, with a sparing capillitium. Asci (?) globose, then ovoid. Genuine sporidia unknown.

**1350. *Endogone australis.*** *Berk. Fl. Tasm.* II., 282, t. 183, f. 15. *Sacc. Syll.* 3597.

Hemispherical, white; asci (?) large, central, aggregate. Sporidia (?) about 100  $\mu$  diam.

On the ground. Tasmania. (Fig. 133.)

*Genera doubtful.*

**GENUS 3. MYLITTA. Fr.**

Tuber hard, externally verrucose or mealy, internally firm, veined, or spotted, at length somewhat hollow. Fructification obscure.

- 1351. *Mytilitta australis*.** *Berk. Ann. Nat. Hist.* III., 325.  
*Sacc. Syll.* 3598.

Globose,  $7\frac{1}{2}$ -10 c.m. diam., firm, cortex unequal, blackish, and covered with warts; gleba solid, yellowish, reticulated with whitish veins, seemingly alveolate. Spores unknown.

In rotten trunks. Victoria. Queensland. N.S.Wales. Tasmania.

***Mytilitta pseudacaciæ*.** *Fr. Syst. Myc.* III., 226.

Some excrescence, not a true *Mytilitta*.

On *Acacia* branches. Tasmania.

## b. DISCOMYCETÆ.

Fleshy, waxy, or coriaceous fungi, with a variously shaped receptacle; hymenium ascigerous, from the first, or soon open.

### Family I. CYTTARIÆ.

#### GENUS 4. CYTTARIA. *Berk.*

Fungi globose or obovate, toughly fleshy when living, rather horny when dry, stuffed or hollow, bearing cells on the periphery, which are spherical, dehiscing above with an ostium or lacinate mouth, replete with an ascigerous mucus. Sporidia continuous, hyaline.

- 1352. *Cyttaria Gunnii*.** *Berk. Hook. Journ.* 1848, 576.  
*Sacc. Syll.* VIII., 1.

Globose or pear-shaped ( $1\frac{1}{2}$ -2 c.m.), at length hollow, attenuated at the base, without stem, not rough, cells small (3 m.m. broad), opening with a broad, irregular pore. Asci cylindrical, shortly stipitate. Sporidia broadly ellipsoid, hyaline.

On branches of *Fagus Cunninghamii*. Tasmania. (Fig. 138.)

#### Family II. HELVELLEÆ. *Schwartz.*

Vertical, stipitate, mitrate, gyrose, clavate, capitate, peltate; excipulum fleshy or waxy.

#### GENUS 5. MORCHELLA. *Dill.*

Fungi between waxy and fleshy, clavately pileate, confluent with the central hollow stem; plicately or reticulately lacunose above, bearing the hymenium effused over the whole surface. Sporidia continuous, hyaline.

\* *Pileus adnate to the stem.*

- 1353. *Morchella esculenta*.** *Linn. Pers. Syn.* 618. *Sacc. Syll.* VIII., 8. *Cooke Myc. f.* 312.

Capitulum obtuse, ovate, adnate at the base, inflated, pits oval, deep, folds swollen, irregular, yellowish, then dingy, stem white, becoming pallid, equal, inflated, slightly mealy; asci cylindrical; sporidia ellipsoid,  $20-22 \times 10-12 \mu$ .

In moist places.

- 1354. *Morchella conica*.** *Pers. Cooke Myco. t. 81, f. 315.*  
*Sacc. Syll. VIII., 10.*

Capitulum oblong-conic, adnate at the base, primary ribs longitudinal, somewhat parallel, edge obtuse, the secondary transverse and fold-like; asci cylindrical. Sporidia broadly ellipsoid,  $20-22 \times 12-15 \mu$ .

In shady places. Victoria. S. Australia. Tasmania. (Fig. 139.)

- 1355. *Morchella deliciosa*.** *Fr. S. M. II., 8. Cooke Myco. f. 320. Sacc. Syll. VIII., 13.*

Capitulum subcylindrical ( $2\frac{1}{2}$ -3 c.m. long), acute, livid yellowish, base adnate, ribs longitudinal, firm, connected by transverse folds, stem even; asci cylindrical. Sporidia broadly ellipsoid,  $20 \times 10-11 \mu$ .

In grassy places. Victoria.

**\*\* *Pileus free at the margin.***

- 1356. *Morchella semilibera*.** *DC. Cooke Myco. t. 85, f. 321.=M. hybrida. Pers. Sacc. Syll. 23.*

Capitulum conical, free to the middle, ribs longitudinal, joined by transverse veins forming oblong pits; stem even (6-10 c.m.  $\times$  12 m.m.); asci cylindrical, sporidia ellipsoid,  $22-24 \times 12-14 \mu$ .

In grassy places. Victoria. N.S.Wales.

#### GENUS 6. **HELVELLA.** *Linn.*

Pileate, waxy membranaceous, with a central stem, inflated, concave beneath, equal or a little undulate above, hymenium covering the upper surface; sporidia continuous, hyaline.

- 1357. *Helvella monachella*.** *Scop. Fr. Sys. Myc. II., 18. Cooke Myco. f. 335. Sacc. Syll. VIII., 62.*

Capitulum deflexed, lobed, adnate, somewhat bay-brown; stem hollow, even, smooth, white ( $2\frac{1}{2} \times 1$  c.m.); asci cylindrical; sporidia ellipsoid,  $18 \times 10 \mu$ .

In woods. Tasmania. (Fig. 140.)

#### GENUS 7. **MITRULA.** *Fries.*

Fungi globose or ovate, or cylindrically clavate, everywhere fertile, stipitate, brightly coloured; sporidia oblong-fusoid, continuous, hyaline.

- 1358. *Mitrula vinosa*.** *Berk Fl. Tasm., f. 273. Cooke Myco. t. 46, f. 181. Sacc. Syll. 118.*

Vinous purple, slender, linear-clavate; stem filiform, straight, smooth; asci subclavate; sporidia linear-oblong, minute, curved,  $8.9 \times 3 \mu$ .

On rotten wood. Tasmania. (Fig. 141.)

#### GENUS 8. **LEOTIA.** *Fries.*

Fungi capitate, rather tremelloid, with a central stem, hymenium spread equally over the capitulum; sporidia elliptical-oblong, continuous, hyaline.

- 1359. *Leotia lubrica.*** Pers. Cooke *Myco. t.* 44, f. 171.  
Sacc. *Syll.* 2510.

Tremellose; pileus tumid, repand, greenish yellow (scarcely 3 c.m. diam.); stem hollow, equal, yellow (3-6 c.m. long); asci clavate,  $90 \times 12 \mu$ . Sporidia ellipsoid, navicular, hyaline, 2-4 nucleate,  $18-24 \times 5 \mu$ ; paraphyses filiform, clavulate above, greenish.

On moist ground. Victoria. Tasmania. (Fig. 142.)

GENUS 9. **GEOGLOSSUM.** Pers.

Fungi clavate, erect, smooth or hairy, covered everywhere by the hymenium; confluent with the sterile stem; sporidia cylindrical, many septate, coloured.

\* *Clubs setose.*

- 1360. *Geoglossum hirsutum.*** Pers. Syn. 608. Cooke  
*Myco. t.* 1, f. 3. Sacc. *Syll.* VIII., 150.

Clavate, hairy, black; clubs for the most part elongated, compressed (1-3 in. high); stem erect; asci fusoid-clavate,  $200 \times 20-25 \mu$ . Sporidia fasciculate, rod-shaped, pale brown, curved, 12-15 septate,  $120-150 \times 6-8 \mu$ , paraphyses filiform, brownish, articulate, clavate and curved at the apex.

Amongst grass. Victoria.

var. **leotioides.** Cooke Grev. VIII., p. 61.

Clubs inflated, ovate, depressed, overhanging the stem like a *Leotia*, sporidia and hairs as in type.

On the ground. New Zealand.

- 1361. *Geoglossum Walteri.*** Berk in Cooke *Myco. t.* 1, f. 4. Sacc. *Syll.* 149.

Hairy, dark-brown, becoming black; clubs spatulate, compressed, or distinct (about 1 in. high); stem slender; asci cylindrically clavate; sporidia curved, 3-7 septate, brown,  $100 \times 5-6 \mu$ ; paraphyses septate, circinate above, brownish.

On stems of *Dicksonia*. Victoria.

\*\* *Clubs smooth.*

- 1362. *Geoglossum Muelleri.*** Cooke *Myco. t.* 1, f. 2. Sacc.  
*Syll.* 138.

Smooth, rather viscid, turning black; club compressed (3-4 m.m.), equal in length and almost distinct from the stem, asci fusoid; sporidia 3 septate, brown, fusoid,  $60-70 \times 8-10 \mu$ ; paraphyses septate, brown above and coalescing.

In grassy places. Victoria.

- 1363. *Geoglossum glabrum.*** Pers. Syn. p. 608. Cooke  
*Myco. t.* 3, f. 1. = *G. ophioglossoides.* Sacc. *Syll.* 141.

Smooth, dry, turning black (1-2 in. high); stem somewhat squamulose; asci clavate, sporidia cylindrical, curved, 7 septate brown,  $70-80 \times 7-9 \mu$ ; paraphyses clavate and moniliform above.

In grassy places. Victoria. Queensland.

**1364. *Geoglossum australe*.** Berk. Cooke Myco. p. 6, f. 8.  
Sacc. Syll. 144.

Smooth, dry, brown, then black, clubs compressed, almost distinct from the squamulose stem ( $3\frac{1}{2}$ -5 m.m. long); asci fusoid; sporidia cylindrical, obtuse at the ends, 6-7 septate, brown, curved,  $120 \times 6-7 \mu$ ; paraphyses filiform, slightly thickened, scarcely septate, ochraceous upwards.

Amongst moss. Victoria. Tasmania. (Fig. 143.)

**1365. *Geoglossum nigratum*.** Fries. Cooke Myco. fig. 345.  
Sacc. Syll. 145.

Fasciculate, fragile, black, fistulose, clubs somewhat compressed, equal in length to the slender stem. Asci fusoid; sporidia cylindrical, curved, 7 septate, brown,  $70 \times 5 \mu$ ; paraphyses septate, incurved and clavate at the tips, brownish.

In grassy places. Harkaway Range.

**1366. *Geoglossum Peckianum*.** Cooke Myco. t. 2, fig. 5.  
Sacc. Syll. 147.

Smooth, somewhat viscid, turning black (about 2 in. high), asci rather fusoid; sporidia linear, 15 septate, brown,  $120 \times 6-7 \mu$ ; paraphyses septate, curved above and circinate, flexuous.

On moist ground. Australia.

*Family III. PEZIZÆ. Fr.*

Cup-shaped or disc-shaped, rarely inflated; stipitate or sessile; excipulum fleshy, or rather coriaceous, or waxy.

GENUS 10. **RHIZINA.** Fries.

Fleshy, crustaceous, sessile, bullate beneath, hymenium superior, even; attached beneath by long rootlets, margin deflexed. Asci cylindrical. Sporidia continuous, hyaline.

**1367. *Rhizina ferruginea*.** Phil. Græ. xvi., 74.

Caps orbicular, sessile, concave, becoming nearly plane ( $\frac{1}{2}$  to 1 in.), margin entire, elevated or incurved, rigid when dry, tough and gelatinous when moist. Hymenium sooty brown, externally minutely tomentose, ferruginous brown. Asci cylindrically clavate, sporidia elliptic, 1-2 guttulate, rough ( $20-23 \times 4-5 \mu$ ), paraphyses thickened upwards, septate.

On fragments of decayed wood. Victoria.

GENUS 11. **GEOPYXIS.** Pers.

Fungi fleshy, cup-shaped, stipitate, externally smooth, stem thin or short, sometimes rooting, not sulcate. Sporidia ellipsoid or oblong, continuous, hyaline.

**1368. *Geopyxis aluticolor*.** Berk. Sacc. Syll. 210. =  
*Peziza* (Tarzetta) *aluticolor*. Berk. Aust. Fungi 220.  
Cooke Myco. t. 50, f. 198. *Peziza* Colensoi. Berk. Fl. N.  
Zeal. t. 105, f. 5. Sacc. Syll. 633.

Pale tan coloured, stipitate, infundibuliform, plicate at the base (12 m.m. broad), margin inflexed, at first delicately tomentose with short, pallid, silky hairs, becoming at length smooth. Stem

dilated at the base (2 m.m. long). Asci cylindrical. Sporidia broadly fusiform, 2-4 guttulate,  $25-30 \times 8-12 \mu$ , even, hyaline, paraphyses a little thickened above.

On wood. Queensland. N.S.Wales. (Fig. 144.)

**Geopyxis amplispora.** C. & P. *Sacc. Syll.* 241.

Victoria.

Requires confirmatory specimens.

GENUS 12. **PEZIZA.** Dill.

Cups large, or medium sized, sessile, cup-shaped or shell-shaped, at length expanded, externally granulose, mealy or naked and even. Sporidia continuous, hyaline, or coloured (*Phæopezia*).

a. **COCHLEARIA.** *Cups large, cochleate.*

**1369. *Peziza (Cochlearia) aurantia.*** Pers. *Obs.* II., 76.

*Cooke Myco. t.* 52, f. 203. *Sacc. Syll.* 253.

Gregarious. Sessile, irregular, oblique, orange, externally whitish, pruinose (3-5 c.m. broad, often more). Asci cylindrical, sporidia ellipsoid, at first smooth, then rough, biguttulate, hyaline,  $16 \times 8 \mu$ , paraphyses clavulate, orange above.

On the ground. Victoria. N.S.Wales. Tasmania.

**1370. *Peziza (Cochlearia) Drummondii.*** Berk. *Hook.*

*Journ.* 1845, 71. *Cooke Myco. t.* 56, f. 219. *Sacc.*

*Syll.* 279.

Cups of medium size, cup-shaped, sessile, with stout ribs radiating from the base, bay-brown (8-10 m.m. broad); disc brown; asci cylindrical; sporidia ellipsoid, even, hyaline,  $15 \times 8 \mu$ ; paraphyses clavulate, yellowish.

On the ground. Victoria. W. Australia.

**1371. *Peziza (Cochlearia) badia.*** Pers. *Obs.* II., 78. *Cooke*

*Myco. t.* 57, f. 226. *Sacc. Syll.* 293.

Cups sessile, entire, flexuous, brown (2-5 c.m. broad); margin at first involute, externally pruinose, paler, rather olivaceous; asci cylindrical; sporidia elliptic, granular, rough, hyaline,  $15-18 \times 8 \mu$ ; paraphyses clavulate.

On moist ground. W. Australia.

**1372. *Peziza (Cochlearia) cochleata.*** Linn. *Cooke Myco.*

*t.* 54, f. 212. *Sacc. Syll.* 307.

Cups sessile, rather caespitose, fleshy, umber, externally pruinose, pallid, or reddish yellow, at first subglobose, then with the margin involute, at length contorted (3-8 c.m. broad); asci cylindrical, stipitate,  $107 \times 10 \mu$ . Sporidia oblong-ovate, biguttulate, hyaline,  $17-18 \times 7-8 \mu$ .

On the ground. Victoria. Queensland. S. Australia. Tasmania.

**1373. *Peziza (Pustularia) vesiculosa.*** Bull. *Champ. t.*

457, f. 1. *Cooke Myco. f.* 242. *Sacc. Syll.* 297.

Cups large, entire, sessile, at first globose or top-shaped, turned in at the edge, then campanulate, with the mouth somewhat

crenate, whitish, then brownish, externally mealy (2-7 c.m. broad). Asci cylindrical; sporidia ellipsoid, even, hyaline,  $20-22 \times 12-13 \mu$ .

On dung, soil, etc. Victoria.

b. *GEOSCYPHA*. *Cups smaller, cupulate.*

**1374. *Peziza (Geoscypha) Saccardiana.*** *Cooke Myco. f. 302. Sacc. Syll. 335.*

Sessile. Cups fleshy, fragile, concave, at length repand, umbilicate, flesh-red (1 c.m. diam.); margin often torn. Asci cylindrical,  $150 \times 14 \mu$ ; sporidia elliptic, rough,  $16-18 \times 9-11 \mu$ ; paraphyses clavate above, brown.

On moist soil. Victoria.

**1375. *Peziza (Geoscypha) brunneo-atra.*** *Desm. Cooke Myco. f. 78. Sacc. Syll. 341.*

Cups sessile, solitary, nearly plane, entire, fleshy, fragile, smooth, dark brown (1 c.m. broad). Asci cylindrical; sporidia ovoid, subhyaline, granulate and minutely rough, nearly hyaline,  $20 \times 10 \mu$ ; paraphyses clavulate.

On naked soil. Victoria.

c. *PHÆOPEZIA*. *Sporidia coloured.*

**1376. *Peziza (Phæopezia) apiculata.*** *Cooke Myco. f. 79. =Phæopezia apiculata. Sacc. Syll. 1966. Humaria Thozetii. Berk. (immature).*

Cups sessile, scutellate (2-6 m.m. diam.), fleshy, rather tough, black, even, smooth; disc concave, margin entire. Asci cylindrical, attenuated downwards, rather truncate at the apex,  $200 \times 18 \mu$ , paraphyses filiform, septate, brownish at the tips. Sporidia oblong-ellipsoid, shortly mucronate at each end,  $20-25 \times 10-11 \mu$ , brown, the mucros at length coloured.

On bark. Victoria.

GENUS 13. *OTIDEA*. *Pers.*

Fungi fleshy, or rather tough, subsessile, dimidiate, or cut down, with one side elongated. Sporidia ellipsoid or oblong, hyaline.

**1377. *Otidea darjeelensis.*** *Berk. Hook. Journ. 1851, 202. Cooke Myco. f. 215.*

Cups expanded, somewhat cochleate, usually elongated on one side (2 in. or more broad), umber, pallid externally. Asci cylindrical; sporidia elliptical, roughly punctate ( $15 \times 8 \mu$ ); paraphyses linear.

On the ground. Victoria.

**1378. *Otidea hirneoloides.*** *Berk. Sacc.=Peziza (Otidea) hirneoloides. Berk. Austr. 219. Cooke Myco. t. 56, f. 220. Sacc. Syll. 358.*

Sessile or very shortly stipitate, red, white beneath (3-4 c.m. broad), hymenium even; sporidia cymbiform, slightly curved,  $20-22 \times 8 \mu$ ; paraphyses clavulate.

On rotten wood. Victoria. Queensland. (Fig. 147.)



- 1379. *Otidea phlebophora*.** *B. Sacc. Syll.* 362.=*Peziza* (*Otidea*) *phlebophora*. *Berk. & Br. Brit. Fungi* 1153. *Cooke Myco. f.* 217.

Sac-shaped, oblique, ochraceous yellow, rather stipitate, delicately pulverulent (2-4 c.m. broad), veined and ribbed at the base. Asci cylindrical; sporidia elliptic, even,  $10-12 \times 6 \mu$ ; paraphyses few, linear.

On the ground. Victoria.

GENUS 14. **DISCINA.** *Fries.*

Fungi fleshy, rather large, soon flattened, discoid, often undulate, repand and lobed, almost immarginate, brownish, rarely bright coloured. Sporidia ellipsoid or oblong, hyaline.

- 1380. *Discina repanda*.** *Wahl. Sacc. Syll.* 373.=*Peziza* (*Discina*) *repanda*. *Wahl. Ups.* 466. *Cooke Myco. t.* 62, *f.* 240.

Large. Cups incised and repand, internally somewhat rugose, brown (4-10 c.m. broad), externally whitish, mealy, produced downwards into a rooting base. Asci cylindrical; sporidia ellipsoid, biguttulate, even,  $18-20 \times 10 \mu$ , hyaline; paraphyses few, filiform.

On rotten trunks and the ground. Victoria. N.S.Wales.

- 1381. *Discina lumbricalis*.** *Cke. Sacc. Syll.* 377.=*Peziza* (*Discina*) *lumbricalis*. *Cooke Grev.* VIII., 61.

Large. Cup-shaped; cups at length expanded, revolute and flattened (3-7 c.m. broad), externally nearly smooth or mealy, internally pallid brown. Asci attenuated, cylindrical,  $200 \mu$  long. Sporidia elliptic, smooth, binucleate, hyaline,  $10-12 \times 5 \mu$ .

On the ground. Victoria. New Zealand. (Fig. 148.)

- 1382. *Discina venosa*.** *Pers. Syn.* 638. *Cooke Myco. f.* 228, 373. *Sacc. Syll.* 391.

Sessile or substipitate, umber brown; externally whitish, rugose with costate veins; base produced into a very short stem; asci cylindrical; sporidia elliptic, smooth, granular within,  $18-23 \times 10-12 \mu$ ; paraphyses copious, clavate and brown at the tips.

On the ground. Victoria.

- 1383. *Discina australica*.** *Cooke.*

Cups large (5-10 c.m. diam.), cup-shaped, then expanded, smooth, ochraceous, attenuated downwards into a short, thick, rooting stem; hymenium of the same colour; asci and sporidia unknown.

On the ground. Victoria. (Fig. 176.)

This species is known only from a drawing, and hence imperfectly characterized.

GENUS 15. **PYRONEMA.** *Carus.*

Cups small, often gregarious, fleshy, depressed, seated on a web-like subiculum; sporidia continuous, hyaline.

**1384. *Pyronema melaloma*.** *Fr. Sacc. Syll.* 401. = *Peziza* (*Pyronema*) *melaloma*. *A. & S. Cooke Myco. t.* 17, *f.* 67.

Cups sessile, crowded, at first concave, then nearly plane, orbicular or flexuous, brick-red orange, brick-red when dry, externally sprinkled with obsolete hairs (4 m.m. broad); asci sub-cylindrical; sporidia ellipsoid, usually uniguttulate,  $16-18 \times 10 \mu$ , paraphyses incrassated at the apex.

On burnt ground. Victoria. W. Australia.

**1385. *Pyronema omphalodes*.** *Bull. Sacc. Syll.* 400. *Cooke Myco. f.* 65.

Cups sessile, crowded, minute, nearly plane, somewhat umbilicate (1 m.m. diam.), seated on a fugacious white tomentum; asci cylindrical; sporidia ovoid,  $12-14 \times 6-7 \mu$ , paraphyses filiform.

On scorched soil. Victoria. (Fig. 149.)

#### GENUS 16. **HUMARIA.** *Fries.*

Cups fleshy, small, cup-shape, expanded, rarely a little convex, often bright coloured; sporidia continuous, hyaline.

##### a. *Crouania*. *Sporidia globose.*

**1386. *Humaria (Crouania) miniata*.** *Fckl. Symb.* 220. = *Humaria Crouani*. *Cooke Myco. t.* 5, *f.* 17. *Barlæa miniata*. *Sacc. Syll.* 416.

Cups fleshy, firm, urceolate, then patellate, scarlet, cells of the margin cylindrically clavate, ochrey (5-10 m.m. diam.); asci cylindrical, long, rounded at the apex; sporidia spherical,  $15-18 \mu$ , uninucleate, at length areolate and rough, hyaline, paraphyses clavulate, granular.

Amongst moss. Victoria.

**1387. *Humaria (Crouania) miltina*.** *Berk. N. Zeal.* 199. *Cke. Myco. f.* 24. *Sacc. Syll.* 424.

Sessile, scattered, crimson, flattened; margin paler beneath, free (1 c.m. diam.); asci cylindrical; sporidia globose, even ( $16 \mu$  diam.), hyaline; paraphyses filiform.

On sandy ground. Victoria. N. Zealand.

**1388. *Humaria (Crouania) globifera*.** *Cooke Myco. f.* 34. = *Barlæa globifera*. *B. & C. Cub.* 669. *Sacc. Syll.* 431.

Yellow, cups saucer-shaped; margin inflexed, sometimes lobed; asci clavate-cylindrical; sporidia globose, even ( $8-10 \mu$  diam.), hyaline.

On sandy soil. Victoria.

**1389. *Humaria (Crouania) Archeri*.** *Berk.* = *Peziza Archeri*. *Berk. Fl. Tasm.* 274.

Sessile, crimson (6 m.m. diam.), at first concave, at length expanded, undulate; margin free; asci cylindrical; sporidia globose, with a large nucleus,  $8 \mu$  diam.

On dead leaves of succulent plant. Tasmania.

The only specimen found in Herb. Berk. is a collapsed *Myxogaster*, immature, with globose hyaline spores.

**1390. *Periza (Crouania) recurva.* Berk. Fl. Tasm. 273.***Cooke Myco. t. 108.*—*Barlæa recurva.* Sacc. Syll. 443.

Cups sessile, undulate, convex, bay brown, smooth (12-20 m.m.); asci cylindrical; sporidia globose, rough, hyaline, 16-17  $\mu$  diam., paraphyses linear.

On the ground. Tasmania.

b. *GENUINA.* *Sporidia ellipsoid or oblong.*

**1391. *Humaria Muelleri.* Berk. Austr. Fun. 221. Cooke***Myco. t. 7, f. 26.* Sacc. Syll. 455.

Scattered, sessile, cups irregular, marginate, externally delicately tomentose; hymenium crimson (1 m.m. broad); asci cylindrical; sporidia elliptical-elongated, 1-2 guttulate, 18  $\times$  6-7  $\mu$ , paraphyses thickened at the apex.

On the ground. Victoria. Tasmania.

**1392. *Humaria Hartmanni.* Phil. Grev. xvi., 5. Sacc.***Syll. 481.*

Gregarious, sessile or substipitate, concave, at length expanded, margin splitting, hymenium pale crimson (4-6 m.m. broad), externally white, becoming smooth; asci cylindrical, attenuated at the base, 150  $\times$  10  $\mu$ ; sporidia subcymbæform or oblong-elliptic, biguttulate, hyaline, 15-21  $\times$  6-9  $\mu$ , at length tinged with red.

On branches. Queensland.

**1393. *Humaria carbonigena.* Berk. Fl. Tasm. II., 274.***Cooke Myco. t. 8, f. 29.* Sacc. Syll. 506.

Gregarious, crowded, orange, cups sessile, umbilicate, flexuous, slightly granular (1 m.m. broad); asci cylindrical; sporidia ellipsoid, 22  $\times$  12  $\mu$ , paraphyses clavate at the apex.

On charred ground. Victoria. Tasmania. (Fig. 150.)

**1394. *Humaria rutilans.* Fr. Syst. Myc. II., 68. Cooke***Myco. t. 15, f. 57.* Sacc. Syll. 518.

Gregarious, sessile, externally thinly clad with white villosity, cups beaker-shaped, rather rugose, disc orange yellow, externally paler ( $\frac{1}{2}$ -1 c.m. broad); asci cylindrical, 125-135  $\times$  16-20  $\mu$ ; sporidia ellipsoid, uniguttulate, at length delicately rough with granules, 20-27  $\times$  12-16  $\mu$ , paraphyses irregularly thickened upwards, replete with orange granules.

On the ground. W. Australia. S. Australia.

**1395. *Humaria fusispora.* Berk. Hook. Journ. 1846, 5.***Cooke Myco. t. 8, f. 32.* Sacc. Syll. 520.

Gregarious, rather crowded, sessile, cups hemispherical, plane or concave, yellow, obsoletely tomentose, 2-5 m.m. diam.; asci cylindrical; sporidia fusiform, a little attenuated to each end, binucleate, 30-32  $\times$  10  $\mu$ , paraphyses filiform, clavulate, rosy at the apex.

On charred soil. Tasmania.

- 1396. *Humaria tenacella*.** *Phil. Grev.* xv., 100. *Sacc. Syll.* 577.

Sessile, cupulate, then plane or convex, glabrous, umber brown ( $\frac{1}{4}$ - $\frac{5}{8}$  in. broad), margin entire, at length repand, flesh firm, thin; asci cylindrical; sporidia elliptic, binucleate,  $10 \times 5-8 \mu$ , paraphyses slender, slightly thickened at the brown, curved apices.

On the ground. Victoria.

- 1397. *Humaria Thozetii*.** *B. Sacc. Syll.* 569. = *Peziza* (*Geoscypha*) *Thozetii*. *Berk. Linn. Journ.* xviii., 388.

Cups pateriform, fleshy, brown (6-8 m.m.); asci slender, very long, cylindrical; sporidia elliptic, papillate at each end, then very minutely granulate,  $20-25 \times 10 \mu$ .

On *Nepenthes*. Queensland. N.S.Wales. (Fig. 173.)

This appears to be the same species as *Peziza* (*Phaeopezia*) *apiculata* (No. 1376) before the sporidia become coloured.

GENUS 17. **PHILLIPSIA.** *Berk.*

Cups broad, disc-shaped, marginate, always open, substance tough; hymenium parting from the exciple; sporidia continuous, hyaline.

- 1398. *Phillipsia subpurpurea*.** *B. & Br. Proc. Linn. Soc. N.S.W.* 1880, p. 88. *Sacc. Syll.* 607.

Cups plane, margin lobed, fixed at the centre (2-3 c.m.); hymenium rather purple, brown when dry, at first white beneath, then chiefly about the margin rather brick-red; asci equal; sporidia uniseriate, broadly ellipsoid,  $25-35 \times 12-16 \mu$ , paraphyses linear.

On wood. Queensland. (Fig. 151.)

- 1399. *Phillipsia polyporoides*.** *Berk. Linn. Journ.* xviii., 386. *Sacc. Syll.* 608.

Effused, adnate, thick, flesh colour ( $2\frac{1}{2}$ -3 c.m. broad); sporidia ellipsoid, binucleate,  $30-32 \mu$  long.

On dead *Vitis*. Queensland.

GENUS 18. **SARCOSCYPHA.** *Fries.*

Fungi fleshy, cup-shaped, stipitate, typically large, externally tomentose; sporidia continuous, hyaline.

a. *Disc brightly coloured.*

- 1400. *Sarcoscypha coccinea*.** *Jacq. Sacc. Syll.* 618. *Cooke Myco. t.* 25, f. 95.

Cups infundibuliform (25 m.m. broad), externally and the stem tomentose with a short, white, adpressed down, disc crimson; asci cylindrical ( $10 \mu$  thick); sporidia oblong-elliptic, uniguttulate,  $24-30 \times 10 \mu$ , paraphyses filiform.

On fallen branches. Tasmania.

- 1401. *Sarcoscypha lepida*.** *B. & C. Pacif. Exp.* No. 149. *Cooke Myco. f.* 357. *Sacc. Syll.* 620.

Cups of medium size (7 m.m.), infundibuliform, seated on a gradually attenuated stem (1 c.m. high), margin inflexed, mealy,

disc crimson; asci cylindrical; sporidia ellipsoid, even, hyaline,  $12 \times 6 \mu$ .

On the ground. S. Australia.

**Sarcoscypha Colensoi.** *B. Sacc. Syll.* 633.

The same as *Peziza (Tarzetta) aluticolor*. Ante No. 1368.

**1402. Sarcoscypha rhenana.** *Fckl. Sacc. Syll.* 630. = *Sarcoscypha splendens*. *Quelet Jura* 388. *Cooke Myco. t.* 112, f. 400.

Cups caespitose, united in a thick stem, whitish tomentose (3-4 c.m. high, attenuated), subglobose, closed, at length open, concave, inflexed at the margin (2-3 c.m.), externally mealy-tomentose, disc orange; asci stipitate, elongated ( $346 \times 16 \mu$ ); sporidia oblong-ovate, 1, rarely 2 guttulate, hyaline,  $20-23 \times 9-11 \mu$ , epispore reticulated and rough, paraphyses filiform, hamate, orange.

On naked soil. W. Australia. (Fig. 152.)

b. **MACROPODIA.** *Disc brownish.*

**1403. Sarcoscypha bulbosa.** *Hedw. Musc. t. x., f. c. Cooke Myco. t.* 48, f. 189. = *Macropodia bulbosa*. *Sacc. Syll.* 638.

Cups hemispherical, turning cinereous, minutely squamulose, disc brown ( $1-2\frac{1}{2}$  c.m. broad); stem firm, squamulose, tuberous at the base ( $12 \times 2$  m.m.); asci cylindrical; sporidia globosely ellipsoid,  $13-15 \times 10-11 \mu$ , paraphyses a little clavate.

On naked soil. Victoria.

c. **PLECTANIA.** *Stem attached by rooting black hairs.*

**1404. Sarcoscypha (Plectania) melastoma.** *Fckl. Synd. Sacc. Syll.* 657. = *Peziza (Rhizopodella) melastoma*. *Sow. Cooke Myco. f.* 103.

Fleshy, disc urceolate, black, externally clad with orange, reddish granular flocci (2-4 c.m.); stem short, attached at the base by dense rooting black hairs; asci cylindrical,  $130-140 \times 15 \mu$ ; sporidia oblong-ellipsoid,  $22-25 \times 9-10 \mu$ , paraphyses filiform.

On old branches. Queensland.

GENUS 19. **TRICHOSCYPHA.** *Cooke.*

Fungi rather fleshy, cup-shaped, stipitate, externally, or chiefly at the margin, furnished with long, rigid, compound hairs; sporidia continuous, hyaline.

**1405. Trichoscypha Hindsii.** *Berk. Fungi t.* 15. *Cooke Myco. f.* 200. *Sacc. Syll.* 652.

Bright red, cyathiform, externally delicately pruinose with tawny yellow, (2 c.m.) margin squamosely fimbriate; stem even, attenuated downwards; asci linear, obtuse; sporidia ellipsoid, biguttulate,  $20-22 \times 12 \mu$ .

On rotten wood. Queensland. New Ireland. (Fig. 153.)

**1406. *Trichoscypha tricholoma*. Mont. Cooke Myco. t. 51, f. 202. Sacc. Syll. 647.**

Stipitate, fleshy, hemispherical, top-shaped, yellow, externally costate-rugose, hairy at the margin, with long rigid setæ of the same colour (2 c.m. broad); stem smooth (1 c.m. long); asci cylindrical, obtuse; sporidia even, biguttulate,  $30 \times 10 \mu$ , paraphyses filiform.

On rotten wood. Queensland.

GENUS 20. **LACHNEA. Fries.**

Fungi fleshy, cup-shaped or saucer-shaped, sessile, tomentose or pilose. Sporidia continuous, hyaline.

**a. SEPULTARIA. Typically large, cup-shaped, externally equally hairy. Sporidia ellipsoid.**

**1407. *Lachnea (Sepultaria) vinoso-brunnea*. B. & Br. Linn. Trans., Ser. 2, Vol. 1., 404, t. 45, f. 11-13. = *Lachnea vinoso-brunnea*. Sacc. Syll. 687.**

Cups sessile, hemispherical, flexuous, then flattened, vinous-brown (6-12 m.m. broad), strigose with short, obtuse, brown, scattered hairs; asci cylindrical; sporidia ovoid, at first with a gelatinous coat,  $25 \mu$  long; paraphyses clavulate.

On burnt ground. Queensland. (Fig. 154.)

**b. SPHÆROSPORA. Cups smaller; sporidia globose.**

**1408. *Lachnea (Sepultaria) confusa*. Cke. Myco. t. 32, f. 124. = *Sphærospora confusa*. (Cke.) Sacc. Syll. 772.**

Gregarious or crowded, cups sessile, subsphæroid, soon hemispherically depressed, brown, clad with short hairs (2-6 m.m. broad). Asci cylindrical,  $15-18 \mu$  thick. Sporidia sphæroid, uniguttulate,  $13-17 \mu$  diam.; paraphyses thickened upwards ( $10-11 \mu$  thick).

On charcoal. Queensland.

**c. SCUTELLINIA. Cups smaller, saucer-shaped, margin setose.**

**1409. *Lachnea (Scutellinia) scutellata*. L. Sacc. Syll. 678. = *Scutellinia scutellata*. Linn. Succ. p. 458. Cooke Myco. t. 34, f. 131.**

Cups flattened, vermilion-red, externally paler (5-8 m.m. diam.), hispid about the margin with straight black hairs ( $600 \mu$  long). Asci cylindrical; sporidia ellipsoid, even, granular within, hyaline,  $20-22 \times 11-13 \mu$ ; paraphyses clavulate, with yellow granules.

On rotten wood. Victoria. Queensland. N.S.Wales. W. Australia. Tasmania.

**1410. *Lachnea (Scutellinia) badioberbis*. B. Sacc. Syll. 699. = *Peziza (Scutellinia) badioberbis*. Berk. Grev. VIII., 137.**

Cups concave, disc vermilion; margin beset with very long hairs. Asci cylindrical; sporidia ellipsoid, largely warted,  $22-25 \times 12-14 \mu$ ; paraphyses.

On rotten wood. N.S.Wales.

- 1411. *Lachnea (Scutellinia) margaritacea.*** *B. Sacc. Syll.*  
700.=*Scutellinia margaritacea.* *Berk. in Cooke Myco. t. 34,*  
*f. 132.*

Cups sessile, hemispherical, at length expanded, vermilion (5-7 m.m.), externally hispid with short brown hairs; margin when dry rather inflexed. Asci cylindrical; sporidia elliptical, warted, hyaline,  $25-27 \times 16-18 \mu$ ; paraphyses clavate above, septate, replete with orange granules.

On rotten wood. Victoria. (Fig. 155.)

- 1412. *Lachnea (Scutellinia) umbrata.*** *Fr. Sacc. Syll.*  
701.=*Scutellinia umbrata.* *Fries.*

Cups scattered, sessile, concave, or nearly plane, externally clad with short, bay-brown, rather rigid hairs, disc red flesh-colour (6-8 m.m. broad). Asci cylindrical,  $120 \times 10-12 \mu$ ; sporidia ellipsoid, without guttules, even,  $14-18 \times 8-9 \mu$ ; paraphyses clavate at the tips.

var. *pallida.* *Rehm. Asco. No. 456.*

Cups brownish flesh-colour, beset with scattered obtuse hairs.

On charred wood, etc. Victoria.

- 1413. *Lachnea (Scutellinia) hirta.*** *Schum. Sacc. Syll.*  
705.=*Peziza (Scutellinia) hirta.* *Schum. Cke. Myco. t. 33,*  
*f. 128.*

Cups sessile, somewhat hemispherical, externally clad with brown hairs (5-8 m.m. broad); margin rather inflexed, disc vermilion-red. Asci cylindrical; sporidia oblong-ellipsoid, verruculose, hyaline,  $22-25 \times 10 \mu$ ; paraphyses filiform, clavate at the tips, replete with yellow granules.

On the ground amongst moss. Victoria.

Marginal hairs 200-300  $\mu$  long.

- 1414. *Lachnea (Scutellinia) dalmeniensis.*** *Cke. Sacc. Syll.*  
730.=*Scutellinia dalmeniensis.* *Cooke Myco. t. 39,*  
*f. 153.*

Cups sessile, fleshy, hemispherical, at length expanded, bright yellow (1 c.m. broad); margin elevated, fringed with long, erect hairs of the same colour (600  $\mu$  long). Asci cylindrical; sporidia elliptic,  $12 \times 7 \mu$ , even; paraphyses narrowly clavate at the tips.

On the ground. Victoria.

- 1415. *Lachnea (Scutellinia) alpina.*** *Fckl. Sacc. Syll.*  
733.=*Peziza (Scutellinia) alpina.* *Fckl. Sym. App. III., 32.*  
*Cooke Myco. f. 148.*

Gregarious. Cups at first closed, then concave, at length flattened (2 m.m. diam.), orbicular; margin distinct, acute, erect, orange-yellow, externally clad with articulate hairs, which are stellate below and setose at the margin. Asci elongated; sporidia oblong-ovate, continuous,  $16 \times 9 \mu$ ; paraphyses simple, clavate, yellow at the apex.

On cow dung. Victoria.

**1416. *Lachnea (Scutellinia) lusatiæ.*** *Cke. Myco. f. 146.*  
*Sacc. Syll. 722.*

Gregarious, sessile, cup-shaped, at length flattened, orange-red, clad externally with erect brown hairs (5 m.m. broad); asci cylindrical; sporidia elliptic ( $25 \times 15 \mu$ ), verrucose; paraphyses clavate above, orange.

On rotten wood. Victoria.

**1417. *Lachnea (Scutellinia) scubalonta.*** *Cke. & Ger. in Myco. f. 150. Sacc. Syll. 725.*

Scattered, sessile, fleshy, hemispherical, at length expanded, contracted when dry, densely clad externally with septate brown hairs; hymenium concave, orange; red when dry; asci cylindrical; sporidia elliptical, even ( $16 \times 8 \mu$ ), paraphyses filiform, subclavate, filled with orange granules.

On dung. Victoria.

**1418. *Lachnea (Scutellinia) theleboloides.*** *Alb. & Schw. Sacc. Syll. 728. Cooke Myco. f. 151.*

Spherical, then open, whitish, disc concave, dirty yellowish (3-5 m.m.), externally hispid with pallid hairs; asci cylindrical, sporidia ellipsoid, even, hyaline ( $12-14 \times 7 \mu$ ), paraphyses clavate.

On earth, etc. Victoria.

**1419. *Lachnea (Scutellinia) coprogena.*** *B. Sacc. Syll. 735. = Peziza (Scutellinia) coprogena. B. & Br. Linn. Trans. II., 69.*

Nearly orange, cups (2 m.m.), invested with pallid bay, obtuse (not cruciate) hairs; sporidia elliptic oblong, even, 35-37  $\mu$  long, paraphyses obtuse.

On dung. Queensland.

**1420. *Lachnea (Scutellinia) erinaceus.*** *Schw. Sacc. Syll. 741. = Peziza erinacea. Schwz. Syn. Car. 1194. Cooke Myco. f. 140.*

Gregarious, orbicular, depressed, ochraceous white (2-4 m.m. broad), externally beset with long bay-brown hairs; asci cylindrical; sporidia elliptical, nucleate, even ( $18-20 \times 10-11 \mu$ ), paraphyses clavate above.

On rotten wood. Queensland.

**1421. *Lachnea (Scutellinia) stercorea.*** *Pers. Sacc. Syll. 744. = Scutellinia stercorea. Pers. Obs. II., 89. Cooke Myco. t. 38, f. 147.*

Gregarious, cups concave, tawny (2-4 m.m.), externally invested about the margin with nearly straight bay-brown hairs (500-600  $\mu$  long), beneath with brown stellate hairs; asci cylindrical, sporidia narrowly ellipsoid ( $20-22 \times 8-9 \mu$ ), even; paraphyses clavulate, hyaline.

On dung. Victoria. Tasmania.



GENUS 21. **SCLEROTINIA.** *Fckl.*

Cups stipitate, springing from a *Sclerotium*, more or less infundibuliform, fleshy or waxy, marginate, at length expanded, smooth; asci elongated; sporidia continuous; hyaline.

**1422. Sclerotinia ciborioides.** *Fries Obs.* II., 307. *Phil. Disco.*, 117.

Cup infundibuliform, even, dark rufous; stem very long, hair-like, bright brown.

Amongst leaves. Victoria.

There is some doubt about this species.

GENUS 22. **CIBORIA.** *Fckl.*

Cups firm, with a long stem, of medium size, waxy, externally smooth or mealy, marginate; sporidia continuous, hyaline.

**1423. Ciboria firma.** *Pers. Syn.* 658. *Sacc. Syll.* 829.

Cups infundibuliform, then dilated and repand, pale brown (7-12 m.m. broad); stem long, attenuated downwards, turning blackish (12-20 m.m. long); asci elongated, stipitate (16  $\mu$  long); sporidia oblong, cylindrical, curved, rounded and obtuse at the ends; hyaline, 2-4 guttulate, 14-16  $\times$  4-5  $\mu$ .

On rotting branches. Tasmania. (Fig. 156.)

GENUS 23. **HELOTIUM.** *Fries.*

Cups waxy, rather thick, disc flattened, at first punctiform, then dilated, always open, sessile or shortly stipitate; sporidia continuous, or spuriously septate, hyaline.

**1424. Helotium nigripes.** *Pers. Fr. Syst. Myc.* II., 132. *Sacc. Syll.* 876.

Cups flattened, concave, pale, smooth, marginate; stem rather long, turning blackish; asci clavate; sporidia oblong, 5  $\times$  1½  $\mu$ .

On trunks and rotting leaves. Tasmania.

**1425. Helotium citrinum.** *Hedw. Musc.* II., p. 28. *Sacc. Syll.* 910.

Crowded, lemon yellow, cups flattened, concave, with the short, thick, paler stem obconical (2 m.m.); asci clavate, 90-100  $\times$  8-9  $\mu$ ; sporidia oblong, obtuse; hyaline, biguttulate, 10-12  $\times$  4  $\mu$ , paraphyses filiform, not clavate at the tips.

On trunks and branches. Queensland. Tasmania. (Fig. 157.)

**1426. Helotium claro-flavum.** *Grev. Fl. Edin.* p. 424. *Sacc. Syll.* 914.

Shortly stipitate or sessile, nearly plane, pale yellow (persistent when dry), smooth (scarcely 1 m.m.); margin emergent, obtuse, somewhat lobed; asci cylindrical; sporidia oblong, or oblong ellipsoid, 7-10  $\times$  2-3  $\mu$ , paraphyses thin, filiform.

On wood and fallen branches. Victoria.

- 1427. *Helotium gratum*.** *Berk. Fl. Tasm.* II., 275. *Sacc. Syll.* 918.

Cups plane, hyaline, marginate, shortly stipitate, almost orange-colour (1 m.m. broad); stem paler, cylindrical, sometimes compressed; sporidia fusoid, 10  $\mu$  long.

On dead wood. Tasmania.

- 1428. *Helotium pateræforme*.** *Berk. Fl. Tasm.* II., 276. *Sacc. Syll.* 1028.

Ochraceous; cups sessile, somewhat lobed, concave, rather rugose and faintly tomentose beneath (4 m.m. broad); asci linear; sporidia oblong, attenuated at each end, subcymbæform, 30  $\mu$  long.

On rotten wood. Tasmania.

- 1429. *Helotium epiphyllum*.** *Pers. Disp.* 72. *Sacc. Syll.* 925.

Subsessile, smooth, convexo-plane, marginate, pallid ochre (2-3 m.m.); asci clavate; sporidia fusoid, curved, 2-4 guttulate (9-12  $\times$  4-5  $\mu$ ), paraphyses filiform.

On dead leaves. Queensland.

#### GENUS 24. **CHLOROSPENIUM.** *Fries.*

Cups shortly stipitate, waxy, often flexuous, æruginous or olive, often colouring the matrix; sporidia continuous, hyaline.

- 1430. *Chlorosplenium æruginosum*.** *Tul. Fung. Carp.* III., 187. *Sacc. Syll.* 1311.

Shortly stipitate, æruginous green, cups turbinate, then expanded and rather flexuous (1-4 m.m. broad), disc becoming whitish; asci clavate (65-75  $\times$  6  $\mu$ ); sporidia fusoid, elongated, straight or curved; hyaline greenish, mostly biguttulate, 10-14  $\times$  3½-4  $\mu$ .

On rotting wood. Victoria. Queensland. (Fig. 158.)

- 1431. *Chlorosplenium omnivirens*.** *Berk. Fl. Tasm.* II., p. 275. *Sacc. Syll.* 1313.

Æruginous-green, cups shortly stipitate, rather top-shaped; hymenium plane; sporidia broad, 18-20  $\mu$  long.

On rotten wood. Tasmania.

#### GENUS 25. **PHIALEA.** *Fries.*

Cups between waxy and membranaceous, thin, at first urn-shaped, almost closed, soon open and concave or convex, smooth or pruinose, with a long slender stem; sporidia continuous, hyaline.

- 1432. *Phialea Berggrenii*.** *C. & P. Sacc. Syll.* 1048. = *Helotium Berggrenii*. *Cooke & Phil. Grev.* VIII., 63.

Pallid, stipitate, cups scattered, wine-glass shape (½-¾ m.m.); stem slender, equal (½-1 m.m. long); asci cylindrical; sporidia elliptic, nucleate, 10-13  $\times$  3-5  $\mu$ ; paraphyses filiform.

On rotting leaves. Victoria. (Fig. 159.)

**1433. *Phialea ceratina*.** *Berk. Sacc. Syll.* 1102.=*Hymenoscypha ceratina*. *Berk. Fl. Tasm.* II., 275.

Top-shaped, stipitate, cups smooth, pale, horny-brown, minute (scarce 1 m.m. high); hymenium plane, marginate, sporidia 20-21  $\mu$  long, oblong-clavate.

On leaves of *Eucalyptus*. Tasmania.

**1434. *Phialea byssogena*.** *B. Sacc. Syll.* 1104.=*Helotium byssigenum*. *Berk. Fl. Tasm.* II., 275.

Ochraceous; cups concave (1-1 $\frac{1}{4}$  m.m.); stem elongated (2-2 $\frac{1}{2}$  m.m.); cylindrical, delicately pruinose, arising from interwoven radiating flocci; asci clavate; sporidia oblong-elliptic, 8-9  $\mu$  long.

On naked wood. Tasmania.

GENUS 26. **PSEUDOHELOTIUM.** *Fckl.*

Cups waxy, thin, cup-shaped, or scutellate, sessile, or nearly so, externally very shortly downy, granular, or pruinose; sporidia continuous, hyaline.

a. **GENUINA.** *Sporidia oblong.*

**1435. *Pseudohelotium hyalinum*.** *P. Sacc. Syll.* 1215.  
=*Lachnella hyalina*. *Pers. Syn.* 655.

Sessile, cups punctiform, subglobose, pellucid like glass when moist, externally downy; asci linear-oblong, 24  $\times$  4  $\mu$ ; sporidia oblong, hyaline, 6-9  $\times$  2-3  $\mu$ .

On rotten trunks. Tasmania.

b. **MOLLISCOELLA.** *Sporidia globose.*

**1436. *Pseudohelotium ilicinolum*.** *B. & Br. Sacc. Syll.* 1267.=*Lachnella ilicincola*. *B. & Br. Ann. N.H.* 958, t. 16, f. 17.

Fasciculate, mealy, cups hemispherical, then expanded, externally dirty white, disc concave, pale brown, or purple, or rosy grey; margin erect or incurved, asci clavate; sporidia globose, uniguttulate, 5  $\mu$  diam., paraphyses filiformly clavate.

On branches of *Ilex* and on *Myrtangium*. Victoria.

GENUS 27. **MOLLISIA.** *Fries.*

Cups superficial, or somewhat erumpent, sessile, minute, waxy, flattened, naked; sporidia continuous, hyaline.

**1437. *Mollisia cinerea*.** *Batsch. Cont.* I., 196, fig. 137.  
*Sacc. Syll.* 1393.

Sessile, soft, minute, cups saucer-like, cinereous, with an entire whitish margin ( $\frac{1}{2}$ - $\frac{3}{4}$  m.m. broad); asci rather clavate, 40-50  $\times$  4-6  $\mu$ ; sporidia oblong, straight or curved, hyaline, 6-12  $\times$  1-2 $\frac{1}{2}$   $\mu$ .

On wood, branches, etc. Victoria. Tasmania. (Fig. 160.)

GENUS 28. **TAPESIA.** *Pers.*

Cups seated on a more or less tomentose subiculum, minute, sessile, rarely somewhat stipitate, waxy, externally smooth, mealy or pilose; sporidia continuous, hyaline.

**1438. *Tapesia epitephra*.** *Berk. Sacc. Syll* 1573. = *Lachnella epitephra*. *Berk. Fl. Tasm.* II., 275.

Minute, white; cups hemispherical or subglobose, concave, seated upon crisp, interwoven flocci.

On leaves. Tasmania. (Fig. 162.)

GENUS 29. **TRICHOPEZIZA.** *Fckl.*

Cups waxy, sessile or nearly so, urceolate, then scutellate, externally hairy, or with the margin ciliate, minute. Asci fusoid. Sporidia oblong or fusoid, continuous, hyaline.

**1439. *Trichopeziza sphærula*.** *Sacc. Hedwigia*, 1890, 155.

Cups scattered, minute (scarcely  $\frac{1}{2}$  m.m. diam.), sessile, globose, dehiscing at the apex, bright sulphur-yellow, sprinkled with divergent, rough, clavulate, simple hairs; asci cylindrical, shortly stipitate, obtuse,  $80-98 \times 6-7\frac{1}{2} \mu$ ; sporidia ellipsoid-oblong, rounded at the ends,  $10 \times 3\frac{1}{2} \mu$ , biguttulate, hyaline; paraphyses filiform.

On bark of *Casuarina*. S. Australia.

GENUS 30. **DASYSCYPHA.** *Fries.*

Cups waxy, distinctly stipitate, urn-shaped, then expanded, externally pilose, or with the margin ciliate. Sporidia continuous, hyaline.

**1440. *Dasyscypha virginea*.** *Batsch. Sacc. Syll.* 1801. = *Lachnella virginea*. *Batsch. Elen. p.* 125.

Stipitate, white. Cups hemispherical (nearly 2 m.m. broad and high), externally beset with crowded, spreading hairs, stem thin, equal, villose; asci cylindrical ( $42 \times 4-5 \mu$ ). Sporidia fusoid, hyaline, continuous,  $6-7 \times 2 \mu$ .

On wood, bark, etc. Tasmania.

**1441. *Dasyscypha lachnoderma*.** *B. Sacc. Syll.* 1804. = *Lachnella lachnoderma*. *Berk. Fl. Tasm.* II., 274.

Cups nearly hemispherical, shortly stipitate, externally snowy white and tomentose, within vermilion-red; asci elongated, clavate; sporidia filiformly fusoid, curved,  $25-26 \mu$ .

On dead bark. Queensland. Tasmania.

**1442. *Dasyscypha glabrescens*.** *C. & P. Sacc. Syll.* 1876. = *Lachnella glabrescens*. *Cooke & Phil. Grev.* VIII., 62.

Scattered, stipitate, white. Cups wine-glass shaped ( $\frac{1}{2}$ -1 m.m. diam.), at first rather villose, at length naked, smooth. Asci clavate; sporidia lanceolate, rounded at the ends, guttulate,  $15-19 \times 3-4 \mu$ , paraphyses filiform.

On *Rhipogonum*. Victoria. (Fig. 163.)

**1443. *Dasyscypha eucalypti*.** *B. Sacc. Syll.* 1924. = *Hymenoscypha eucalypti*. *Berk. Fl. Tasm.* II., 274, t. 183, f. 13.

Pallid olive; cups plane, margin ciliate with rigid, dark purple hairs (1 m.m.); stem cylindrical; asci clavate, sporidia oblong-cymbæform ( $10-11 \mu$  long).

On *Eucalyptus* leaves and *Casuarina*. Victoria. Tasmania.

- 1444. *Dasyscypha lanariceps*.** *C. & P. Sacc. Syll.* 1938.  
= *Lachnella lanariceps*. *Cooke & Phil. Grev.* VIII., 62.

Scattered, stipitate, ochraceous-brown, cups top-shaped, at length open ( $\frac{1}{2}$  m.m.), villose, sprinkled with purple granules, asci clavate; sporidia cylindrical, attenuated at each end,  $15-20 \times 3 \mu$ ; paraphyses elongated-fusiform, acute.

On *Rhipogonum* (?). Victoria.

- 1445. *Dasyscypha terrestris*.** *B. & Br. Sacc. Syll.* 1947.  
= *Helotium terrestre*. *B. & Br. Proc. Linn. Soc. N.S.W.*  
1880, p. 89.

Cups stipitate, small, nearly plane, horn colour, lurid, externally villose (4-5 m.m. broad). Asci elongated, sporidia elliptic, shortly appendiculate at each end, uniguttulate,  $10 \mu$  long, paraphyses filiform, clavate at the tips.

On naked soil. Queensland.

#### GENUS 31. **BELONIDIUM.** *Mont.*

Cups sessile or shortly stipitate, scutellate, or infundibuliform, waxy, smooth or downy, asci elongated; sporidia elongated, multiseptate.

- 1446. *Belonidium araneosum*.** *Berk. Sacc. Syll.* 2064.=  
*Peziza araneosa*. *Berk. Fl. Tasm.* II., 275. *Peziza arachnoidea*. *Cooke Austr. F.* 50.

Cups at first subglobose, then hemispherical, at length expanded externally web-like, seated upon creeping threads; hymenium orange-yellow; sporidia curved, multinucleate ( $50-52 \mu$  long), linear.

On wood. Tasmania.

#### GENUS 32. **ERINELLA.** *Sacc.*

Cups stipitate or sessile, villose, waxy, minute; sporidia filiform, hyaline.

- 1447. *Erinella lutea*.** *Phil. in Grev.* XIX., 61.

Gregarious or scattered, shortly stipitate, cupulate, clothed at first with short whitish hairs, which become yellow, then yellowish brown; margin at first inflexed, then when moist erect; hymenium orange-yellow; asci broadly clavate, narrowing to an obtuse point at the summit; sporidia 8, linear, multiseptate,  $76-102 \times 5-6 \mu$ ; paraphyses slenderly filiform.

On the bark of a tree. Victoria.

#### Family IV. **ASCOBOLEÆ.** *Boud.*

Cups fleshy, sessile or sessile, plane or convex; asci soon expelled from the disc, operculate; sporidia globose or ellipsoid, coloured or hyaline.

#### GENUS 33. **ASCOBOLUS.** *Pers.*

Cups rather fleshy, sessile or nearly so, smooth or somewhat pilose; asci extruding; sporidia continuous, violet or brown.

**1448. *Ascobolus furfuraceus*. Pers. Syn. 672. Sacc. Syll. 2143.**

Sessile, somewhat concave, brownish, then greenish, externally mealy (2-4 m.m.); asci cylindrically clavate, attenuated downwards and stipitate, rounded, almost truncate at the apex,  $140-150 \times 20-22 \mu$ ; paraphyses filiform, septulate; sporidia oblong-ellipsoid,  $22-30 \times 10-14 \mu$ , at first violet, then vinous brown, longitudinally striate with branched striæ, involved in mucus.

On cow dung, etc. W. Australia.

**1449. *Ascobolus australis*. Berk. Linn. Journ. XVIII., 389. Sacc. Syll. 2149.**

Brown, cup-shaped (5 m.m.); asci clavate; sporidia elliptic, purple-brown, even,  $60-72 \mu$  long, paraphyses linear, broadest at the apex.

On dung. Queensland.

**1450. *Ascobolus Phillipsii*. Berk. No. 851.**

Cups concave, with an elevated margin (3-5 m.m.), externally wax colour, then tawny, smooth, disc cinereous; asci clavate; sporidia elliptical, smooth, without striæ or reticulations, becoming brown ( $21-28 \times 11-13 \mu$ ); paraphyses clavate.

On cow dung. Queensland. (Fig. 164.)

**1451. *Ascobolus Baileyi*. B. & Br. Linn. Trans. II., 69. Sacc. Syll. 2150.**

Cups at first ochraceous, concave, at length vinous brown, and flattened externally, slightly granulate; asci clavate, prominent; sporidia brown, ovate, even,  $15-18 \mu$  long, paraphyses linear, clavulate at the apex.

On dung. Queensland.

**1452. *Ascobolus Archeri*. Berk. Fl. Tasm. II., 276. Sacc. Syll. 2161.**

Cups undulated, sessile, vinous brown (3 m.m. diam.); asci clavate; sporidia amethyst colour, elegantly granulated,  $12-13 \mu$  long, then up to  $16-17 \mu$  long.

On charcoal. Tasmania.

*Family V. DERMATEÆ. Fries.*

Cups urceolate, or at length flattened, subsessile or stipitate, corky, leathery, or horny, often mealy outside.

**GENUS 34. URNULA. Fries.**

Cups stipitate, urn-shaped, contracted, then dehiscing with a round or lacinate mouth, coriaceous, brown, mealy or pubescent; sporidia continuous, hyaline.

**1453. *Urnula campylospora*. Berk. Cooke. = *Peziza campylospora*. Berk. Fl. N. Zeal. 200. Sacc. Syll. No. 640.**

*Geopyxis cinereo-nigra*. B. & Br. Sacc. Syll. 218. *Peziza cinereo-nigra*. B. & Br. Linn. Trans. I., 404, t. 46, f. 16-18.

Infundibuliform, sooty or cinereous black ( $2\frac{1}{2}$  c.m. broad), cups shortly or elongated stipitate, tough, externally smooth, fibrillose,

deeply or irregularly rugose, margin incurved; stem of the same colour, even or sulcate, dilated above into the base of the cup (1-2 c.m. long), flesh pallid; asci cylindrical; sporidia large, oblong, curved, rounded at the ends ( $25-30 \times 12 \mu$ , sometimes longer); paraphyses linear, forked at the apex.

On putrid wood. Queensland. N. Zealand. (Fig. 165.)

**1454. *Urnula rhytidea*. Berk. Fl. N. Zeal. II., 200, t. 105, f. 6. Sacc. Syll. 331.**

Sooty brown, cups nearly sessile, hemispherical, incised, externally delicately innate-fibrous, rather hard and tough (25 m.m.), undulately rugose, flesh olive; hymenium polished; asci cylindrical; sporidia oblong-elliptic,  $30 \times 8 \mu$ .

On the ground. N.S.Wales. N. Zealand.

GENUS 35. **CENANGIUM**. *Fries.*

Cups erumpent, then superficial, often caespitose on a common stroma, globose and closed, then open and urn-shaped or scutellate, coriaceous or rather horny, typically mealy, generally brown or black; sporidia continuous, hyaline.

**1455. *Cenangium lichenoideum*. B. & Br. Linn. Trans., Ser. 2, Vol. I., p. 404, t. 45, f. 9. Sacc. Syll. 2323.**

Caespitose, cinereous, cups top-shaped, stipitate, invested with irregular, cinereous warts,  $1\frac{1}{2}-2\frac{1}{4}$  m.m. broad; margin thick, incurved, cinereous, striate, when young irregularly squamose; hymenium even, red-brown; asci octosporous; sporidia ellipsoid,  $32-36 \mu$  long.

On trunks. Queensland.

Family VI. **BULGARIEÆ**. *Fries.*

Cups top-shaped, cup-shaped or discoid, gelatinous, becoming somewhat horny or cartilaginous.

GENUS 36. **OMBROPHILA**. *Fries.*

Cups sessile or shortly stipitate, plane or convex (rarely concave), gelatinous, epiphytic. Sporidia continuous, hyaline.

**1456. *Ombrophila violacea*. Hedw. Fr. Summ. Veg. Scane. 357. Sacc. Syll. 2526.**

Gregarious or scattered, at the first rather obconic, then distinctly stipitate, violet or pallid violet, plano-convex, then convex, pileiform when dry, and concave (2 m.m.-1 c.m. high); stem obconic, short. Asci clavate,  $95-105 \times 9-13 \mu$ , crowded; sporidia fusoid-oblong or subellipsoid, sometimes biguttulate, hyaline,  $10-16 \times 4-6 \mu$ ; paraphyses slender.

On trunks.

var. **australis**. *Cooke Grev. Sacc. Syll. 2526.*

Stem longer, flexuous, rather cinereous.

On branches. Victoria. (Fig. 167.)

**1457. *Ombrophila radicata*.** *Phil. Grev.* xvi., 93. *Sacc. Syll.* 2532.

Solitary or caespitose; cups stipitate, rather gelatinous (4-10 m.m.); hymenium depressed, rugose, liver-colour; margin thin, entire, smooth upwards, rugose, flesh-colour; stem elongated, attenuated downwards (6-12 m.m. long), rooting. Asci cylindrically clavate; sporidia elliptic, biguttulate, hyaline,  $6-10 \times 4-5 \mu$ ; paraphyses branched, clavate, umber at the tips.

In swampy places. Victoria. (Fig. 166.)

**1458. *Ombrophila terrestris*.** *Phillips. Grev.* xvi., 75. *Sacc. Syll.* 2553.

Orbicular, sessile, gelatinous, concave or flattened; margin entire, erect (6-12 m.m.); hymenium umber, externally paler, smooth; sporidia fusiform, elliptic, smooth, uniguttulate,  $18-20 \times 7-10 \mu$ ; paraphyses filiform, a little thickened at the tips.

On the ground. Victoria.

**1459. *Ombrophila bulgarioides*.** *Sacc. Pug. Austr.* p. 14, fig. 4.

Cups gelatinous, then hard, crowded in clusters, at first suburceolate, sessile, then shortly stipitate, scutellate, externally bright ochrey-yellow, almost even, disc nearly plane, soon undulate and twisted ( $5-6$  m.m.), rufous brown. Asci tapering, rounded above ( $35-40 \times 3\frac{1}{2}-4 \mu$ ); sporidia oblong, straight or curved ( $6-7 \times 2 \mu$ ), hyaline, continuous.

On rotten wood. Queensland.

**1460. *Ombrophila trachycarpa*.** *Phil. Grev.* xix., 61.

Subgregarious, sessile, concave, glabrous (1-2 c.m.), wrinkled horizontally on the exterior; margin even, somewhat incurved, firm, cartilaginous-gelatinous, dark red-brown throughout, paler within. Asci cylindrical, narrowed near the base; sporidia 8, elliptic, tending to fusiform, furnished with one large guttule, granulated on the surface,  $20-25 \times 10-14 \mu$ ; paraphyses rather stout, enlarged at the summits, septate.

On sandy ground amongst mosses. Victoria.

GENUS 37. **ORBILIA.** *Fries.*

Cups rather gelatinous, at first subspherical, then nearly plane or concave, sessile, superficial, rarely substipitate, typically quite smooth, rather horny when dry. Sporidia continuous, hyaline.

**1461. *Orbilia chrysocoma*.** *Bull. Sacc. Syll.* 2572.

Gregarious, superficial, at the first subglobose, soon flattened and rather tremelloid (scarcely  $\frac{1}{2}$  m.m. diam.), golden yellow, somewhat horny when dry, flexuous. Asci cylindrical, sessile ( $40-45 \times 5 \mu$ ); sporidia rod-like ( $14-15 \times \frac{3}{4}-1 \mu$ ), curved hyaline; paraphyses short, thread-like, a little clavate above.

On wood. Victoria. (Fig. 161.)



- 1462. *Orbilia decipiens*.** *Phil. Sacc. Syll.* 2568. = *Calloria decipiens*. *Phil. Grev.* xvi., 5.

Gregarious or scattered, sessile, 1-2 m.m. diam., subimmersed when dry; hymenium plane or a little concave, pale flesh-colour or orange-red, or pale brown, externally of the same colour, granulose; margin somewhat erect, now and then denticulate. Asci cylindrically clavate; sporidia fusiform, hyaline,  $5-7 \times 1-2 \mu$ ; paraphyses filiform, abruptly thickened at the tips.

On old rope. Queensland.

GENUS 38. **CORYNE.** *Tul.*

Fungi gelatinous, sessile, or shortly stipitate, globose or top-shaped, disc usually plane or convex. Sporidia elongated, hyaline, septate or pseudo septate.

- 1463. *Coryne sarcoides*.** *Jacq. Sacc. Syll.* 2647. = *Bulgaria sarcoides*. *Fr. Syst. Myc.* II., 168.

Cæspitose, variable in form, rather firm, fleshy-red, externally rather veined, disc excavated. Asci cylindrical, more or less rounded at the apex, or acute, attenuated downwards and stipitate,  $100-135 \times 7-8 \mu$ . Sporidia elliptic, or elongated elliptic, more or less attenuated towards each end, and rounded,  $10-18 \times 4-6$ , at first continuous, 2-4 guttulate, then (2-4) pseudo septate, hyaline; paraphyses copious, filiform, simple.

On trunks. Victoria. Tasmania. (Fig. 175.)

Family VII. **STICTEÆ.** *Fries.*

Innate, cups minute, urceolate, then expanded, immersed in the unchanged matrix, scarcely covered, waxy, usually of a bright colour.

GENUS 39. **STICTIS.** *Pers.*

Cups immersed, waxy, rather cup-shaped or plane, exceeded by the thin excipulum, which is reflexed, entire, or lacinate, and paler. Sporidia filiform, septulate, hyaline, not breaking into joints.

- 1464. *Stictis radiata*.** *Linn. Pers. Obs.* II., 73. *Sacc. Syll.* 2795.

Cups flesh-coloured or yellowish, deeply immersed ( $\frac{1}{2}$  m.m. diam.), girt by a 4-6 rayed white, mealy, elevated border. Asci narrowly cylindrical, rather stipitate, densely fasciculate,  $180-200 \times 7-10 \mu$ ; sporidia needle-shaped, thin, straight, or curved at the apex, hyaline, 20-30 guttulate,  $120-220 \times 1-1\frac{1}{2} \mu$ ; paraphyses very thin, now and then branched at the tips.

On wood and branches. Tasmania.

- 1465. *Stictis emarginata*.** *Cke. & Mass. Grev.* xviii., p. 7.

Very minute, gregarious. Cups immersed, erumpent, pierced at the apex, destitute of any definite excipulum. Asci clavately cylindrical, sessile; sporidia filiform, continuous, hyaline, equal in length to the asci,  $70-75 \times 2 \mu$ .

On *Eucalyptus* leaves. Victoria. (Fig. 168.)

*Family VIII. PHACIDIÆ. Fries.*

Cups minute, innate, waxy, usually blackish, covered by the cuticle, which at length splits in various ways.

GENUS 40. **PSEUDOPEZIZA.** *Fckl.*

Cups erumpent, usually seated on spots, gregarious, minute, smooth, waxy or fleshy, plane or concave, with a spurious crenulate margin, or circumscribed by the lacerated cuticle. Sporidia continuous, hyaline.

**1466. Pseudopeziza trifolii.** *Bern. Sacc. Syll. 2970.* = *Phacidium trifolii. Boud. Ann. Sci. Nat. 1869.*

Sessile, epiphyllous, minute, cups plane, smooth, pale honey-coloured, yellow ( $\frac{1}{2}$  m.m. diam.). Asci oblong, clavate,  $80 \times 15 \mu$ , shortly stipitate; sporidia oblong-ellipsoid,  $12-14 \times 6-7 \mu$ , biguttulate, hyaline; paraphyses filiform, rather thick, and compressed together.

On languishing leaves of clover. Victoria.

**1467. Pseudopeziza medicaginis.** *Lib. Sacc. Syll. 2971.* = *Phacidium medicaginis. Lib. Exs. 176.*

Scattered, minute, soon flattened, ochraceous-brown, innate on yellowish suborbicular spots, then girt by the 3-4 toothed epidermis ( $\frac{1}{2}$ -1 m.m. broad); asci stipitate, sporidia ovate, hyaline ( $8-11 \times 4-6 \mu$ ), two-guttulate.

On leaves of *Medicago*. Victoria. (Fig. 174.)

*Sub-Genus. FABRÆA. Sacc.*

Sporidia uniseptate, hyaline.

**1468. Pseudopeziza (Fabræa) rhytismoideum.** *C. & M. Grev. XVIII., 81.*

Cups clustered together upon a kind of pseudostroma in the centre of the leaves, usually 6 to 8, minute, externally dark brown, disc pallid, cinereous, closing in drying, and wholly becoming pitch-brown, nearly black, and then resembling a *Rhytisma*; asci clavate; sporidia cylindrical, obtuse at the ends, uniseptate, hyaline,  $16-18 \times 3-4 \mu$ , paraphyses numerous.

On living leaves of *Cotula*. Victoria.

GENUS 41. **COCCOMYCES.** *DeNot.*

Cups fleshy or waxy, hemispherical, depressed, swollen when moist, brownish, orbicular or angular, epithecium concrete with the epidermis, divided from the centre outwards into many teeth; sporidia elongated, simple or septate, hyaline.

**1469. Coccomyces delta.** *Kunze.* = *Phacidium delta. Kze. Linn. v., 551. Coccomyces trigonus. Fr. in Sched.*

Innate, three-angled ( $\frac{1}{2}$ -1 m.m.), with three elevated joinings, dehiscing in three valves, disc brown; sporidia rod-like, guttulate ( $50-70 \times 2 \mu$ , paraphyses filiform).

On *Eucalyptus* leaves. Victoria. (Fig. 169.)

*Family IX. PATELLARIÆ. Fries.*

Superficial, cups minute, between leathery and horny, often becoming black, not mealy externally.

GENUS 42. **PATINELLA.** *Sacc.*

Cups scutellate or flattened, sessile, rather coriaceous, blackish or dark coloured; sporidia continuous, hyaline.

**1470. Patinella tasmanica.** *B. Sacc. Syll.* 3162.

=*Patellaria tasmanica.* *Berk. Fl. Tasm.* II., 276.

Small, sessile; cups concave, then plane; hymenium rufous, then black; sporidia oblong, curved, continuous, 10-12  $\mu$  long.

On dead wood. Tasmania.

**1471. Patinella Adamsoni.** *Berk. Sacc. Syll.* 3178.

=*Patellea Adamsoni.* *Berk. Linn. Journ.* XIII., 176.

Orbicular, plane; cups marginate, quite black (1. m.m. diam.); sporidia shortly and narrowly fusiform, continuous, hyaline.

On branches of *Eucalyptus*. Victoria. (Fig. 170.)

GENUS 43. **KARSCHIA.** *Korb.*

Cups superficial, sessile, plane or patellate, between coriaceous and carbonaceous, black, marginate; sporidia uniseptate, brown.

**1472. Karschia lignyota.** *Fr. S. M.* II., 150. = *Patellaria lignyota.* *Fr. Sacc. Syll.* 3200.

Cups superficial, saucer-shaped, externally dark rufous, margin thin, soon flexuous (1. m.m.), disc rather concave, quite black; asci clavate, 40-55  $\times$  12  $\mu$ , paraphyses copious, crowded together; sporidia oblong, constricted, uniseptate, 10-16  $\times$  3-4  $\mu$ , 2-4 guttulate, pale sooty brown.

On rotten wood. Victoria. (Fig. 171.)

*Family X. GYMNOASCACEÆ. Bar.*

Effused, byssoid, superficial, formed by naked asci crowded together side by side.

GENUS 44. **EXOASCUS.** *Fckl.*

Excipulum wanting; spurious hymenium effused, spot-like, byssoid-velvety, parasitic on living plants which are deformed thereby; asci clavate, octosporous; sporidia continuous, hyaline, often globose.

**1473. Exoascus deformans.** *B. Sacc. Syll.* 3341. =

*Ascomyces deformans.* *Berk. Intr.* 284.

On the under surface of leaves, which are here and there bullose and pruinose with white; asci narrowly cylindrical, rounded, 35-50  $\times$  5-7  $\mu$ , basal cells 10-16  $\times$  2-5  $\mu$ ; sporidia subglobose, 3-5  $\mu$  diam.

On leaves of *Amygdalus*, etc. Victoria. Queensland. (Fig. 172.)

c. HYSTERIACEÆ. *Corda.*

Receptacle more or less elongated, coriaceous or carbonaceous, exposing the hymenium by longitudinal fissure.

GENUS 45. **AIOLOGRAPHUM.** *Lib.*

Perithecia minute, somewhat linear, simple or branched, dehiscing with a very narrow fissure, membranaceous. Asci short. Sporidia ovate-oblong, uniseptate, hyaline, very rarely perhaps immature, continuous.

**1474. Ailographum melioloides.** *Cke. & Mass. Grev.* XVIII., 6.

Epiphyllous. Spots black, orbicular or confluent, composed of radiating threads of mycelium. Perithecia adnate, gregarious, elongated, linear, flexuous, black, the lips firmly closed, seated upon the spots. Asci oblong; sporidia eight, elliptic, constricted at the middle, uniseptate, hyaline,  $12-14 \times 7-8 \mu$ .

On coriaceous leaves. Queensland.

**1475. Ailographum eucalypti.** *Cke. & Mass. Grev.* XVIII., 6.  
=Schizothyrium eucalyptorum. *Cke & Mass. Grev.* XVI., 2 (immature).

On both surfaces. Perithecia gregarious, seated on orbicular rufous spots, minute, linear or confluent, straight or curved, lips narrowly closed when dry, black. Asci clavate, eight-spored; sporidia biseriate, rather fusiform, 1-3 septate, hyaline,  $9-10 \times 4 \mu$ .

On dead leaves of *Eucalyptus*. Victoria. (Fig. 177.)

GENUS 46. **GLONIUM.** *Muhl.*

Perithecia emergent, linear, elongated, rarely oblong or orbicular, often radiately disposed, carbonaceous or horny, membranaceous, dehiscing with a fissure. Asci ovoid-ellipsoid, rarely cylindrically clavate; sporidia uniseptate, hyaline, rarely at length brownish.

**1476. Glonium stellatum.** *Muhl. Cat. Am.* 101. *Sacc. Syll.* 5586.

Subiculum effused, indeterminate, 4-5 in. broad, plane, adpressed, dark brown, of interwoven, thin-branched, intricate fibres; perithecia innate in this, diverging from the centre for an inch or two in a radiate manner, and anastomosing, crowded, always closed, but when old with a very narrow crack. Asci elongated, clavate; sporidia fusoid, acute, straight, four times as long as broad, uniseptate, hyaline.

On rotten wood. Tasmania.

**1477. Glonium tardum.** *B. Sacc. Syll.* 5607.=*Hysterium tardum.* *Berk. Fl. Tasm.* II., 281.

Perithecia elliptical, obtuse, opening slowly. Asci oblong, short; sporidia uniseptate,  $15-20 \times 5-5\frac{1}{2} \mu$ .

On leaves of *Cyathodes straminea*. Tasmania. (Fig. 178.)

GENUS 47. **LEMBOSIA.** *Lev.*

Perithecia ovate or elongated, dehiscing by a longitudinal fissure, innate on a fibrillose radiating subiculum. Asci subglobose or oblong; sporidia bilocular, typically coloured. (Fig. 179.)

**1478. Lembosia graphioides.** *Sacc. & Berl. Sacc. Syll. 7376.*

Perithecia epiphyllous, gregarious, linear-oblong, or furcate ( $\frac{1}{2} \times \frac{1}{8}$  m.m.), black; subiculum obsolete. Asci oblong-clavate, sessile,  $40-45 \times 12-14 \mu$ ; sporidia unequally uniseptate, lower cell smallest,  $12-14 \times 6 \mu$ , pale sooty-brown.

On leaves of *Olea paniculata*. Queensland.

GENUS 48. **HYSTERIUM.** *Tode.*

Perithecia superficial or erumpent, oblong or ellipsoid, horny, carbonaceous, firm, dehiscing with a longitudinal fissure, with swollen lips. Asci clavate or cylindrical; sporidia oblong or elongated, two or many septate, brown or yellowish.

**1479. Hysterium pulicare.** *Pers. Syn. 98. Sacc. Syll. 5634.*

Perithecia scattered or gregarious, superficial, variable in form, mostly oblong or ellipsoid, longitudinally striate, rigid, black, lips obtuse, disc linear, black, scarcely dilated ( $1 \times \frac{1}{2}$  m.m.). Asci clavate; sporidia oblong, straight or curved, three-septate, brown, terminal cells paler,  $27-33 \times 8-10 \mu$ ; paraphyses filiform.

On bark. N.S. Wales. (Fig. 180.)

GENUS 49. **TRIBLIDIELLA.** *Sacc.*

Perithecia erumpent, then superficial, subcoriaceous, lips swollen, soon widely gaping. Asci eight-spored; sporidia oblong, two or many septate, typically triseptate, then coloured.

**1480. Tryblidiella rufula.** *Spreng. Sacc. Syll. 5694. = Triblidium rufulum. Fries.*

Erumpent, oblong, flexuous, or triangular, even, black, swollen lips transversely striate, disc becoming red; asci elongated, cylindrical; sporidia oblong, triseptate, scarcely constricted at the septa, rufous, then sooty brown,  $30-35 \times 10 \mu$ .

On bark of trees. Queensland. (Fig. 181.)

GENUS 50. **RHYTIDHYSTERIUM.** *Speg.*

Perithecia elongated, dehiscing with a longitudinal fissure, rather swollen lips involute, obtuse, transversely sulcate; asci eight spored; sporidia uniseptate and hyaline, then 3 or more septate and coloured.

**1481. Rhytidhysterium scortechinii.** *Sacc. & Berl. Sacc. Syll. 7382.*

Perithecia scattered, superficial, oblong-elongated,  $1\frac{1}{2}-2 \times 0.6-0.7$  m.m., subcoriaceous, with a linear, rather broad fissure, disc red-brown, lips swollen, transversely closely sulcate-striate, blackish; asci tapering,  $180-200 \times 12-14 \mu$ ; sporidia oblong, obtuse, 3

septate, slightly constricted,  $25-27 \times 12 \mu$ , sooty brown, soon opaque.

On bark of trees. Queensland.

GENUS 51. **TRIBLIDIOPSIS.** *Cooke & Mass.*

Perithecia erumpent, then superficial, somewhat coriaceous, lips swollen, connivent, then broadly gaping; sporidia elliptical or fusiform, hyaline, septate, then muriformly divided.

**1482. Triblidiopsis cæspitosum.** *Cke. & Mass.* = *Triblidium cæspitosum.* *Cke. & Mass. Grev. xvi., 2.*

Tufts scattered, erumpent, black (2-4 m.m. diam.), cups (scarcely 1 m.m. diam.) hemispherical, a long time closed, at length gaping, coriaceous; asci at first subglobose; sporidia fusiform, rounded at the ends, five septate, hyaline, at length swollen, subelliptic and muriformly divided,  $40-45 \times 15-18 \mu$ .

On bark. Victoria. (Fig. 182.)

GENUS 52. **HYSTEROGRAPHIUM.** *Corda.*

Perithecia superficial or erumpent, oblong, between corky and horny, firm, splitting with swollen lips; asci clavate; sporidia oblong, 3 or many septate, with longitudinal divisions, hence muriform, olive or sooty, paraphyses filiform.

**1483. Hysterographium elongatum.** *Wahl. Fl. Lapp. 528.*  
*Sacc. Syll. 5759.*

Perithecia superficial, for the most part innate on a black spot-like crust, oblong, straight, rarely flexuous, nearly smooth, opaque, black, lips swollen, disc linear ( $3$  m.m. long,  $\frac{3}{4}$  mm. broad); asci clavate, pedicellate,  $150 \times 30 \mu$ ; sporidia oblong, 7-9 septate, with longitudinal divisions, commonly constricted in the middle, brown, opaque,  $42-46 \times 14-17 \mu$ , paraphyses filiform, clavate at the tips.

On decorticated wood. W. Australia.

**1484. Hysterographium hiascens.** *Rehm.* = *H. macrum.*  
*Sacc. & Berl. Sacc. Syll. 5771.*

Perithecia elongated, linear, straight, parallel ( $1-1\frac{1}{2} \times \frac{3}{10}$  m.m.), black, with a narrow fissure, lips stout; asci clavate, shortly stipitate,  $90-100 \times 25-30 \mu$ ; sporidia oblong, rather fusoid,  $25-30 \times 8-10 \mu$ , 6-8 septate, and muriform, constricted at the middle, olive.

On rotten wood. Victoria. Queensland. (Fig. 183.)

**1485. Hysterographium Roussellii.** *DeNot. Sacc. 5768.*

Erumpent, at length superficial, oblong-linear, obtuse at the ends, disposed in parallel lines, longitudinally striate, black, opaque, lips with a swollen obtuse edge, connivent, or with a narrow opening; asci subcylindrical; sporidia oblong, more or less constricted in the middle, 3-5 septate, one or other of the cells longitudinally divided, bay-brown when mature.

On wood. Victoria.

**PYRENOMYCETÆ Fr.**

Perithecia fleshy, coriaceous, carbonaceous, or membranaceous, wholly enclosing the hymenium, usually pierced at the apex.

*Family I. HYPOCREACEÆ. DeNot.*

Simple or composite; perithecia rather fleshy or waxy, often reddish, pale, or bright coloured, never carbonaceous; stroma, when present, soft, between fleshy and waxy, rarely byssoid.

*Sub-Family 1. Hypocreoidæ.***GENUS 1. CORDYCEPS. Fries.**

Stroma stipitate, erect, growing on insects or fungi, clavate; perithecia immersed in the stroma, or semi-immersed, or nearly free; asci 8 spored; sporidia filiform, soon breaking up into joints, hyaline.

**1486. Cordyceps Gunnii.** *Berk. Dec. Fung. 200. Fl. Tasm. II., 278. Sacc. Syll. 5030.*

Entomogenous, fleshy, capitulum cylindrical, yellow, becoming blackish above; stem elongated, white; asci cylindrical; sporidia filiform, breaking into cylindrical joints, 5  $\mu$  long, hyaline.

On larvæ. Victoria. Tasmania. N.S.Wales. Snowy River. (Fig. 184.)

**1487. Cordyceps Hawkesii.** *Gray Not. t. 2, f. 10-12. Sacc. Syll. 4018. Cooke Grev. XIX., 76.*

Stroma cylindrical, attenuated and truncate at the apex, punctate with the ostiola of the immersed perithecia (entire length 12-18 c.m.); stem flexuous, unequal (5-10 c.m. long), simple, sometimes forked, with 3 or 4 clubs; asci cylindrical; sporidia filiform, breaking up into joints.

On larvæ. Tasmania.

**1488. Cordyceps entomorrhiza.** *Fr. Summ. Veg. Scan. 381. Sacc. Syll. 5012.*

Fleshy, capitulum subglobose, brown; stem thin, very long; asci cylindrical; sporidia filiform, breaking up into cylindrical joints, 7-8  $\mu$  long, hyaline.

On insects. Victoria.

**var. menesteridis.** *Berk. & Mull. Gard. Chron. 1878, fig. 230.*  
Capitulum elliptic, reddish, at first powdery; sporidia as above.  
On larvæ. Victoria.

**GENUS 2. EPICHLÖE. Fries.**

Stroma sessile, effused, at first bearing conidia, encircling the culms of grasses, usually brightly coloured, somewhat fleshy; perithecia immersed, ostiola scarcely prominent; asci 8 spored; sporidia filiform, continuous or multiseptate, hyaline.

- 1489. *Epichlœ cinerea*.** *Berk. & Br. Ceylon Fungi* No. 982.  
*Sacc. Syll.* 5059.

Stroma encircling the culms of grasses, at first pallid, then dark cinereous, punctate with the rather darker ostioli; perithecia immersed; asci cylindrical; sporidia long, filiform.

On various grasses. Queensland. (Fig. 185.)

GENUS 3. **HYPOCREA.** *Fries.*

Stroma fleshy, variously coloured, pulvinate or effused, superficial; asci cylindrical, 8-spored; sporidia two-celled, hyaline or coloured, cells soon separating, and then apparently 16 spored.

- 1490. *Hypocrea cerebriformis*.** *Berk. Linn. Journ.* XIII., 179. *Sacc. Syll.* 4897.

Pulvinate, rugose, lobed, fawn colour, 12-25 m.m. diam., substance thick, pallid; perithecia immersed, of the same colour; sporidia 8, globose.

On trunks. S. Australia.

- 1491. *Hypocrea semiorbis*.** *Berk. Fl. Tasm.* II., 278. *Sacc. Syll.* 4898.

Hemispherical, rather fleshy (1-2 m.m. thick), ochraceous, darker than the bark, disc nearly plane or depressed; perithecia immersed, elliptical, pallid, ostiola minute; sporidia?

On bark and wood. Tasmania.

- 1492. *Hypocrea citrina*.** *Pers. Fr. Summ. Veg. Scan.* 185. *Sacc. Syll.* 4875.

Fleshy, effused, nearly plane, lemon-yellow, ostiola rather prominent, brownish; asci cylindrical,  $102 \times 6 \mu$ , joints of the sporidia unequal, nearly globose,  $4-6 \mu$  diam.

On wood, soil, rotting leaves, etc. Tasmania. (Fig. 186.)

- 1493. *Hypocrea rufa*.** *Pers. Fr. Summ. Veg. Scan.* 383. *Sacc. Syll.* 4834.

Stroma gregarious, superficial, hemispherical or pulvinate when moist, sometimes repand or irregular, collapsing when dry, depressed, and the surface rugose, rather soft and fleshy, punctate with the slightly prominent ostiola, pale flesh-colour, reddish or at length red, whitish within, 2-4 m.m. broad; perithecia sphaeroid; asci cylindrical,  $65-75 \times 4-5 \mu$ ; sporidia of two nearly equal cells ( $3-4 \mu$  diam.), soon separating, hyaline.

On wood or bark. Tasmania.

*Sub-Genus.* **HYPOCRELLA.** *Sporidia filiform.*

- 1494. *Hypocrea (Hypocrella) discoidea*.** *B. & Br. Ceylon Fungi* 998. *Sacc. Syll.* 5061.

Orbicular, placentiform, separating from the matrix, scarlet; perithecia rather prominent; asci clavate; sporidia filiform,  $100 \mu$  long, faintly multi-nucleate.

On leaves. Queensland. (Fig. 187.)



**1495. *Hypocrea (Hypocrella) axillaris*. Cooke. *Grev.* xx., 4.**

Stroma obturbinate or obclavate, seated in the upper axils (5 m.m. long, 2-3 broad), black, opaque, minutely granular with the ostiola, substance white; perithecia very minute, immersed in the periphery; asci cylindrical, 120  $\mu$  long; sporidia filiform, at length multiseptate (about 100  $\mu$  long), hyaline.

On grasses. Queensland.

**GENUS 4. *POLYSTIGMA*. Pers.**

Stroma effused, rather fleshy, innate, ochraceous, tawny, or red; perithecia immersed; asci octosporous; sporidia ovoid, continuous, hyaline.

**1496. *Polystigma australiense*. Sacc. *Bull. Soc. Myc. Fr.* 1889, 116, t. 14, f. 2.**

Stroma epiphyllous, or rarely on the branches, immersed, rather swollen, unequal, occupying half or whole of the leaf, dull rosy, rather fleshy; perithecia close, immersed in the stroma, then protuberant, scarcely papillate, at first ochraceous red, then turning blackish ( $\frac{1}{4}$ - $\frac{1}{2}$  m.m.); asci clavate; sporidia oblong-ellipsoid, 15-18  $\times$  5-6  $\mu$ , hyaline.

On leaves of *Leguminosæ*. Victoria. (Fig. 190.)

**Sub-Family 2. *Nectriæ*.****GENUS 5. *SPHÆROSTILBE*. Tul.**

Perithecia globose, soft, bright-coloured, in company or at the base of conidia-bearing stroma (*Stilbum*, etc.); asci 8-spored; sporidia oblong or ovoid, uniseptate, hyaline.

**1497. *Sphærostilbe cinnabarina*. Tul. *Sel. Carp.* III., 103. *Sacc. Syll.* 4817.**

Perithecia produced at the base of conidia-bearing stroma, small, sessile, globose, scarcely papillate, quite smooth, orange-red, a little collapsing when old; asci clavate-oblong, 18  $\times$  13-16  $\mu$ ; sporidia ovate-oblong, 22-26  $\times$  7  $\mu$ , multi-nucleate, hyaline.

On bark. N.S.Wales.

**1498. *Sphærostilbe hypocreoides*. K. & C. *Grev.* ix., p. 26, t. 36, f. 25. *Sacc. Syll.* 4820.**

Pallid rose, convex; perithecia connate in a hypocreoid stroma, associated with clavate conidiophores, ostiola papillate; asci cylindrical; sporidia elliptic, uniseptate, hyaline, 10-12  $\times$  7  $\mu$ , epispore slightly granulate.

On bark. Queensland.

**1499. *Sphærostilbe microspora*. Cke. & Mass. *Grev.* xvi., 4.**

Ascigerous perithecia, in company with, or at the base of the conidiophorous hyphæ, minute, scattered, ovate, even, orange; asci clavate, stipitate; sporidia elliptic, uniseptate, not constricted, hyaline, 6  $\times$  2-3  $\mu$ , conidia bearers stilbum-shaped, erect, pallid; stem even, attenuated upwards, rather thick, capitulum globose, of

the same colour (perhaps at first flesh-colour), conidia elliptic, continuous, hyaline,  $10 \times 6 \mu$ .

On bark. Victoria. (Fig. 189.)

*Species incomplete.*

**1500. *Sphærostilbe dubia*. Berk. Linn. Journ. xviii., 389.**

Only the *Stilbum* form seems to be known, and even that is undescribed.

On bark of *Ægiceras*. Rockhampton.

GENUS 6. **NECTRIA**. Fries.

Perithecia free, cæspitose, seated on a definite, at first conidia-bearing, rather fleshy stroma, ostiola mostly papillate, fleshy or rather membranaceous, smooth, villose or squamose, bright coloured; sporidia ellipsoid or elongated, typically uniseptate, but sometimes continuous, hyaline.

\* **NECTRIELLA**. *Sporidia continuous.*

**1501. *Nectria fusarioides*. Berk. Fl. Tasm. II., 279. Sacc. Syll. 4561.**

Pale crimson; perithecia ovate-papillate, pruinose, semi-immersed in an umber-coloured stroma; sporidia fusoid-oblong, curved,  $8-9 \times 2-3 \mu$ , continuous, hyaline.

On dead bark. Tasmania.

\*\* **GENUINA**. *Sporidia uniseptate.*

**1502. *Nectria coccinea*. Fr. Summ. Veg. Scan. 388. Sacc. Syll. 4670.**

Perithecia cæspitose, on an erumpent, convex, somewhat yellowish stroma, ovoid, or subsphæroid, papillate, even, bright red, sometimes ochraceous-red, rarely collapsing; asci cylindrical,  $90-100 \times 6-8 \mu$ ; sporidia ellipsoid, uniseptate, hyaline, not constricted,  $12-16 \times 5-7 \mu$ .

On bark. Victoria. Queensland. N.S.Wales. Tasmania. (Fig. 191.)

**1503. *Nectria tasmanica*. Berk. Fl. Tasm. II., 279. Sacc. Syll. 4705.**

Cæspitose, red, seated on a pallid stroma; perithecia ovate, with a papillate ostiolum, often springing from an orbicular disc; asci cylindrical; sporidia elliptical, curved, uniseptate, not constricted,  $2-4$  guttulate, hyaline,  $18-19 \times 8-9 \mu$ .

On dead bark. Tasmania. (Fig. 192.)

**1504. *Nectria zealandica*. Cooke Grev. VIII., 65. Syn. Pyr. 229. Sacc. Syll. 4678.**

Cæspitose, brick-red, erumpent, pustules convex; perithecia subglobose, even, papillate, soon depressed or concave; asci clavate; sporidia biseriata, elliptical, uniseptate, constricted at the middle, hyaline,  $20-25 \times 8-10 \mu$ .

On bark. Victoria. N. Zealand.

GENUS 7. **HYPOMYCES.** *Fries.*

Perithecia connected by an effused byssoid stroma, parasitic on *Hymenomyces*, etc., immersed, brightly coloured, with short ostiola; asci 8-spored; sporidia oblong or fusoid, typically uniseptate, hyaline.

**1505. *Hypomyces chrysospermus.*** *Tul. Sel. Fung.* III., 51, t. 8, f. 1-13. *Grev.* XI., 5, t. 146. *Sacc. Syll.* 4614.

Mycelium penetrating the matrix when living, and destroying it, bearing conidia; perithecia densely packed in a rough stratum, sphaerically ovoid, more or less elongated at the neck with acute, pervious, ciliate ostiola, pale yellow-brown; asci subcylindrical, attenuated below,  $120-200 \times 9-10 \mu$ ; sporidia narrowly lanceolate, mucronate at either end, uniseptate, rather constricted, hyaline,  $25 \times 6 \mu$ .

On *Boleti* chiefly. W. Australia. Victoria. (Fig. 188.)

**1506. *Hypomyces rosellus.*** *A. & S. Consp.* 55, t. 7, f. 3. *Grev.* XI., t. 149. *Sacc. Syll.* 4617.

Perithecia gregarious, emerging from a subiculum, or loosely interwoven, at first white then bright red thin mycelium, sphaerically ovoid, with an obtuse or acute papilla, rosy-red, small; asci linear,  $150 \times 6\frac{1}{2} \mu$ ; sporidia elongated, apiculate at each end, 3-4 guttulate, uniseptate, constricted, often unequal-sided, hyaline,  $22-37 \times 5-7 \mu$ .

On *Polyporus*, etc. W. Australia.

**1507. *Hypomyces tomentosus.*** *Fries. Grev.* IV., 15. *Berk. Fl. Tasm.* II., 278. *Sacc. Syll.* 4643.

Stratum white, delicate, tomentose, without distinct stroma.

On Agarics. Tasmania.

**1508. *Hypomyces aurantius.*** *Tul. Carp.* III., 43. *Plow. Grev.* III., 44, t. 150.

Conidia, mycelium creeping, branched, septate, white (then orange, fertile threads erect, branching, verticillate, conidia apical, ovate or obovate, hyaline, unequally uniseptate,  $16-18 \times 8-10 \mu$ ; perithecia seated on an effused, floccose, ochraceous subiculum, often white at the margin, crowded, spherical with a conoid apex, golden yellow or orange,  $\frac{3}{10}$  m.m. diam.; asci cylindrical; sporidia linear lanceolate, acute, often apiculate, uniseptate, hyaline, curved,  $15-24 \times 4-6 \mu$ .

On *Polyporus*, etc. Queensland.

**1509. *Hypomyces membranaceus.*** *B. & Br. Cooke.* = *Hypocrea membranacea.* *B. & Br. Proc. Linn. Soc. N. S. W.* v., 89. *Linn. Trans.* II., 70.

Forming at first a very thin byssus, which gradually becomes a membrane, nowhere thicker than silver-paper, and thinner at the margin, tan-coloured; perithecia scattered, pale orange (immature).

Parasitic on some *Polyporus*. Queensland.

GENUS 8. **DIALONECTRIA.** *Sacc.*

Perithecia free, distinct from each other, scattered or gregarious (but not cæspitose on a definite stroma), fleshy or soft, bright coloured; sporidia oblong, elliptic, or elongated, typically uniseptate, sometimes continuous.

a. *Sporidia uniseptate.*

- 1510. *Dialonectria sanguinea.*** *Sibth. Fr. Summ. Veg. Scan.* 388. *Sacc. Syll.* 4721.

Perithecia scattered, adnate, ovoid, rarely subsphæroid, ostiola papillate, even, blood-red (rarely flesh-colour), soft (180  $\mu$  diam.); sporidia ellipsoid, rather unequally uniseptate, slightly constricted, hyaline, 7-10  $\times$  4-5  $\mu$ .

On wood and bark. W. Australia.

- 1511. *Dialonectria quisquilaris.*** *Cooke Grev. VIII.*, 65. *Sacc. Syll.* 4733.

Scattered, amber coloured, or a little orange; perithecia even, here and there crowded, but not cæspitose; asci cylindrical; sporidia uniseptate, scarcely constricted, 16-20  $\times$  8  $\mu$ .

On bark, chips, etc. Victoria. (Fig. 193.)

- 1512. *Dialonectria tephrothele.*** *Berk. Fl. Tasm. II.*, 278. *Sacc. Syll.* 4742.

Perithecia scattered, crimson, ovate, with a darker papillate ostiolum; asci somewhat fusoid, 85-90  $\times$  12-13  $\mu$ . Sporidia rather fusiform, obtuse at each end, 4-guttulate, 18-20  $\times$  6-7  $\mu$ , uniseptate, hyaline.

On *Hypoxylon*. Tasmania.

b. *OPHIONECTRIA. Sporidia filiform.*

- 1513. *Ophionectria agaricicola.*** *Berk. Fl. Tasm. II.*, 278, t. 183, f. 14. *Sacc. Syll.* 5001.

Vermilion. Perithecia ovate, even, with a fibrous vesiculose texture; asci narrowly cylindrical, very long, 300-320  $\times$  4-5  $\mu$ , the membrane thickened at the apex. Sporidia filiform, scarcely  $\frac{1}{3}$   $\mu$  thick, nearly equal in length to the asci, continuous, hyaline.

On putrid Agarics. Victoria. Tasmania.

GENUS 9. **GIBBERELLA.** *Sacc.*

Perithecia cæspitose on a stroma, or dispersed, between waxy and membranaceous, often blue or violet. Sporidia ovoid, then fusoid, 3-septate, or more, hyaline.

\* *Sporidia triseptate.*

- 1514. *Gibberella saubinetii.*** *Mont. Fl. Alg.* 479. *Sacc. Syll.* 4977.

Perithecia gregarious, confluent in tufts and growing together, somewhat membranaceous, warted, at length flaccid, plicate, ovoid, contracted at the base as if pedicellate, blue, 200-300  $\times$  170-200  $\mu$ ,

papillate; asci oblong-lanceolate,  $60-76 \times 10-12 \mu$ . Sporidia fusiform, curved or straight, rather acute, 3-septate, scarcely constricted, hyaline,  $18-24 \times 4-5 \mu$ .

On herb stems. Victoria. Tasmania.

\*\* *LISIELLA*. *Sporidia* continuous.

**1515. Gibberella (Lisiella) passifloræ.** Cke. & Mass. Grev. xvi., 5.

Perithecia erumpent, then superficial, aggregated in small clusters, globose, somewhat papillate, substance bright blue, cellular; asci rather fusoid, 8-spored. Sporidia elliptic, continuous, hyaline,  $12 \times 5 \mu$ .

On stems of *Passiflora*. Queensland. (Fig. 194.)

GENUS 10. **MELANOSPORA.** Corda.

Perithecia simple, soft, diaphanous, ostiola produced into a subulate beak, often penicillate at the apex. Sporidia ellipsoid, continuous, brown.

**1516. Melanospora caprina.** Fr. Summ. Veg. Scan. 396. Sacc. Syll. 4599.

Perithecia superficial, globose, villous, white; ostiolum subulate, turning blackish; asci clavate. Sporidia ellipsoid, continuous, at length expelled in a globule from the apex of the ostiolum.

On wood and chips. Tasmania. (Fig. 195.)

Family II. **XYLARIÆ.**

GENUS 11. **XYLARIA.** Hill.

Stroma erect, clavate or subglobose, often stipitate. Perithecia immersed in the stroma or adnate, carbonaceous, papillate. Sporidia ovoid, amygdaloid, or navicular, continuous, brown.

Section A. **XYLOGLOSSA.** Fr.

Club everywhere fertile, stem smooth.

a. *Capitulum* clavate, stem thin, elongated.

† Simple.

**1517. Xylaria australis.** Cooke Grev. II., 84, t. 152, f. 2. Sacc. Syll. 5937.

Stroma clavate, naked (3 in. long,  $\frac{1}{2} \times \frac{3}{4}$  in. thick), thickened upwards, obtuse, even, brown, punctate with the very minute ostiola, whitish within, then hollow; stem elongated ( $1\frac{1}{2}$ -2 in.). smooth, thin ( $\frac{1}{4}$  in. thick), becoming blackish; asci cylindrical, stipitate. Sporidia narrowly lanceolate, brown ( $15 \times 3 \mu$ ).

On wood. Queensland.

**1518. Xylaria involuta.** Klotzsch. Linnæa. = X. tabacina, Kickx. Sacc. Syll. 1228. Grev. XI., t. 162, f. 3.

Coriaceous, clavate, ochraceous, then brownish-yellow, or fawn-coloured, obtuse (2-4 in. long,  $\frac{1}{2}$ - $\frac{3}{4}$  thick), attenuated below into a rather long slender stem; ostiola punctate, perithecia rather large,

subglobose, substance of stroma white within, becoming hollow with age. Asci cylindrical, 8-spored. Sporidia ( $22-25 \times 5 \mu$ ) lanceolate, straight, or slightly curved, continuous, brown.

In woods. Queensland. N.S.Wales.

- 1519. *Xylaria grammica*.** *Mont. Syll. No. 680.* = *Xylaria ectogramma*. *Berk. Linn. Journ. XIII.*, 177. *Sacc. Syll.* 1189, 1197. *Grev. XI.*, t. 163, f. 12.

Large, corky, club-shaped (3 in. long,  $\frac{1}{2}$  in. thick), crustate, laccate, rigid, fragile, sooty black, smooth, becoming whitish. Clubs elongated, confluent with the stem, acuminate at the apex, obtuse, marked longitudinally with flexuous, anastomosing lines, which are scarcely impressed, hollow within; perithecia thin, in determinate lines or series, ostiola papillate; asci subcylindrical. Sporidia elongated, elliptic,  $15-18 \times 4 \mu$ . Stem sometimes as long as the club, sometimes very short, almost obsolete.

On trunks. Victoria. Queensland.

- 1520. *Xylaria rhopaloides*.** *Kunze. Mont. Ann. Sci. Nat.* 1885, 99. *Grev. XI.*, t. 163, f. 14. *Sacc. Syll.* 1234.

Simple, clavate, shortly stipitate (3 c.m. high, 5 m.m. thick). Clubs cylindrical, obtuse, attenuated downwards into a short, smooth stem, stroma rugose, glaucous, then black, rough with the ostiola. Perithecia numerous, rather small. Asci cylindrical, shortly stipitate. Sporidia elliptical, continuous, brown,  $10 \times 5 \mu$ .

On putrid wood. Queensland.

- 1521. *Xylaria Schweinitzii*.** *B. & C. Exot. Fungi* 284. *Sacc. Syll.* 1222. *Grev. XI.*, t. 163, f. 15.

Club elliptic, obtuse, corky, compact; stem elongated, distinct, laccate, quite smooth, slightly cracked; perithecia globose, ostiola scattered, scarcely prominent. Sporidia cymbiform,  $30 \mu$  long.

On rotten wood. Victoria. N.S.Wales.

- 1522. *Xylaria rhytidophlæa*.** *Mont. Syll.* 687. *Sacc. Syll.* 1200. *Grev. XI.*, t. 163, f. 21.

Simple. Stroma indurated, horny, compressed, obtuse, or horn-shaped, black, opaque, fuliginous within; stem very short and thinly rugosely reticulate; perithecia peripheral, globose, immersed, ostiola rather prominent; asci cylindrical. Sporidia small, oblong-ovoid, brown,  $10-13 \times 6 \mu$ .

On wood. Victoria. Queensland.

- 1523. *Xylaria Zealandica*.** *Cooke Grev. VIII.*, 66. *Grev. XI.*, t. 163, f. 22. *Sacc. Syll.* 1209.

Simple, slender, stipitate, black; clubs cylindrical, rugose, obtuse above (18-20 m.m. long); ostiola minute, following the veins; stem smooth, channelled (25-35 m.m.); asci cylindrical. Sporidia broadly fusiform, uniguttulate, dark brown, continuous,  $32-35 \times 10 \mu$ .

On rotten wood. Queensland. N. Zealand.

**1524. *Xylaria scopiformis*. (Kunze.) Mont. Sacc. Syll. 1288.**

Simple, slender, often fasciculate, 2-3 c.m. long. Clubs ( $1-1\frac{1}{2}$  c.m. long, 1 m.m. thick) cylindrical, acute at the apex, black; stem about as long as the club, smooth, often compressed; perithecia few, large, inflating the clubs so as to appear nodulose. Sporidia unequal sided, dark brown ( $10-12 \times 3\frac{1}{2} \mu$ ).

On wood. Queensland.

†† *Furcate*.

**1525. *Xylaria ovispora*. Cke. & Mass. Grev. xv., 101.**

Stroma coriaceous, black, stipitate, erect, furcate and palmate above, attenuated downwards into the smooth stem. Asci cylindrical; sporidia subglobose, brown,  $6 \times 5 \mu$ .

On stumps. Queensland.

**1526. *Xylaria gracilis*. Klot. Hook. Herb. Sacc. Syll. 1188.**

Coriaceous. Stem smooth, furcate, fastigiate, clubs cylindrical, narrow, acute, sterile at the apex (36-40 m.m. high), rugose, black.

On wood. Queensland.

b. *Capitulum clavate, stem thick and short*.

**1527. *Xylaria polymorpha*. Grev. Fl. Edin. 355. Sacc. Syll. 1150.**

Stromata 2 to 6, rarely more, connate at the base in clusters, rarely solitary, erect, thick, smooth, clay-coloured brown, then black, sometimes simple, with the apex and base more or less attenuated, or quite obtuse, sometimes obovate and compressed, or furcate, sometimes also subglobose; perithecia rather prominent, rugulose, immersed all over the clubs, densely crowded, ovate or subglobose, papillate; asci cylindrical,  $140-180 \times 8-10 \mu$ ; sporidia subfusiform, or nearly ovate, acute at the ends, unequal sided, brown,  $20-22 \times 5-9 \mu$ .

On wood. N.S. Wales. Queensland.

**1528. *Xylaria cerebriformis*. Cooke Grev. xi., 86, t. 165, f. 46. Sacc. Syll. 5946.**

Large, corky, stipitate, sooty brown, stem scarcely 1 in. long,  $\frac{1}{3}$  in. thick, woody, smooth, sulcate, sometimes lateral; club somewhat elliptic ( $1\frac{1}{2} \times 1$  in.), deeply sulcate, otherwise rugose, brain-like, at length nearly smooth, white within; perithecia small, globose, black, crowded; ostiola very minute, scarcely visible, plane; asci cylindrical; sporidia narrowly lanceolate, straight or curved, brown ( $9-10 \times 2\frac{1}{2} \mu$ ).

On wood. Queensland.

**1529. *Xylaria cynoglossa*. Cooke Grev. xii., 1. Sacc. Syll. 6355.**

Umber, tongue-shaped (12-15 c.m. long, 3 c.m. broad), very shortly stipitate, flesh white; perithecia crowded, cylindrical,

black, ostiola slightly papillate, black, asci cylindrical; sporidia narrowly fusiform, straight, or curved,  $16-18 \times 4 \mu$ .

On wood. Queensland.

**1530. *Xylaria lobata*.** *Cooke Grev. xi., 86, t. 166, fig. 57.*  
*Sacc. Syll. 5949.*

Large, corky, shell-shaped, sessile (3 in. or more diam.,  $\frac{1}{4}$  in. thick), flattened, circumference lobed, brown, even, rather shining; lobes rounded, white within; perithecia crowded, globose, black; ostiola very minute, punctiform, plane; asci cylindrical; sporidia narrowly lanceolate, straight, or curved, brown,  $12 \times 3 \mu$ .

On wood. Queensland.

**1531. *Xylaria castorea*.** *Berk. Fl. N. Zeal. 204, t. 105, f. 10. Grev. xi., t. 167, f. 60. Sacc. Syll. 1246.*

Stem short, at first spongy, velvety, at length naked, rugose, black; clubs obtuse, ovate, or subelliptic, compressed, and minutely areolate (2-3 c.m. high, 12-16 m.m. thick); ostiola rather prominent, rough; asci narrow; sporidia ovoid-oblong, sooty brown,  $10 \mu$  long.

On rotten wood. Queensland. N. Zealand. Tasmania.

**1532. *Xylaria allantoides*.** *Berk. Hook. Journ. 1839, p. 397. Grev. xi., t. 167, f. 62. Sacc. Syll. 1178.*

Stroma clavate, obtuse, compact, encrusted with black, coriaceous (1-2 in. long, or more,  $\frac{1}{4}$  in. thick); stem very short, smooth; perithecia minute, globose; ostiola minute, rather prominent. Asci cylindrical; sporidia continuous, brown,  $10-12 \times 3\frac{1}{2} \mu$ .

On stumps. Queensland. Victoria. Musgrove Range. Fiji. (Fig. 197.)

**1533. *Xylaria fistulosa*.** *Lev. Fr. Nov. Symb. 126. Grev. xi., t. 167, f. 63. Sacc. Syll. 1185.*

Corky, simple, club-shaped, with a varnished crust, opaque, black, hollow (2-2 $\frac{1}{2}$  in. long,  $\frac{1}{4}$  in. thick), confluent with the short, naked stem, perithecia globose, ostiola crowded, rather prominent, shining black; asci cylindrical; sporidia oblong, uniguttulate, continuous, brown,  $20 \times 3\frac{1}{2} \mu$ .

On trunks. Queensland.

**1534. *Xylaria dealbata*.** *B. & C. Exot. Fun. 284. Grev. xi., t. 167, f. 64. Sacc. Syll. 1223.*

Club elliptical (1 $\frac{1}{2}$  in. long,  $\frac{1}{2}$  in. thick), attenuated downwards into a short, cylindrical stem, wholly covered with a fragile, whitened crust. Asci elliptical; sporidia large ( $40 \times 10 \mu$ ), continuous, brown.

On rotten trunks. Queensland.

**1535. *Xylaria anisopleura*.** *Mont. Syll. 688. Grev. xi., t. 168, f. 70. Sacc. Syll. 1219.*

Solitary, woody, very hard; club obovate ( $\frac{1}{2} \times \frac{1}{4}$  in.), as well as the oblique obconic stem, opaque, scaly, pallid within and



solid; perithecia in the upper part raising somewhat hemispherical, tubercles, globose; ostiola discoid, papillate in the centre. Asci cylindrical, sporidia continuous, large, brown,  $35 \times 10 \mu$ .

On dead wood. Queensland.

**1536. *Xylaria ellipsospora*.** Cke. & Mass. Grev. xvi., 33.

Capitulum clavate, obtuse ( $\frac{1}{2} \times \frac{1}{4}$  in.), black. Stem abbreviated, smooth; perithecia immersed, not prominent; ostiola minute, punctiform. Asci cylindrical, sporidia elliptic, dark brown, opaque,  $16-18 \times 8 \mu$ .

On rotten wood. Tasmania.

**1537. *Xylaria phosphorea*.** Berk. Linn. Journ. xiii., 177.  
Grev. xi., t. 168, f. 75. Sacc. Syll. 1167.

Rufous, small (not exceeding  $\frac{1}{2}$  in.). Stem short, cylindrical, striate, dilated upwards into a short club; perithecia raising the surface into even warts; disc pallid, ostiola rather prominent, black. Asci cylindrical, sporidia  $10-12 \times 4-5 \mu$ , continuous, brown, unequal sided.

On trunks. Victoria.

c. *Capitulum subglobose*.

**1538. *Xylaria cretacea*.** B. & Br. Linn. Trans. 1879, 405.  
Sacc. Syll. 5963.

Subglobose, stipitate, white, rather rugose (1 in. diam.), reticulated with thin brown lines, punctate with minute black ostiola, formed within of fragile woody strata, radiating from the stem, whitish; perithecia oblong, black, ostiola scarcely prominent; sporidia oblong, continuous, brown,  $35-50 \times 12-20 \mu$ .

On trunks. Queensland.

**1539. *Xylaria gigas*?** Cooke.

Large, ochraceous, then brown (8-10 c.m. high, 4-6 c.m. thick). Clubs oval or irregular, rugose, solid. Stem stout and irregular. Perithecia imperfect, hence doubtful.

On stumps, etc. N.S. Wales.

**1540. *Xylaria elastica*.** Cke. Grev. xvi., 4.

Between corky and elastic, subglobose (1-2 in. diam.), or hemispherical, convex, sessile, becoming black; ostiola punctiform, perithecia numerous, crowded, laterally compressed, texture spongy, elastic, white. Asci clavate-cylindrical, 8-spored, sporidia uniseriate, almond-shaped, binucleate, brown,  $12 \times 6-7 \mu$ .

On rotten wood. Victoria.

**1541. *Xylaria cinnabarina*.** Cooke & Mass. xv., 101.

Stroma corky, subglobose, corrugated or depressed, brown, vermilion under the thin cuticle, white within, stem obsolete; perithecia large, prominent; asci cylindrical; sporidia lanceolate, brown,  $10-12 \times 3-4 \mu$ .

On wood. Queensland.

**1542. *Xylaria tuberiformis*.** Berk. *Fl. N. Zeal.* II., 204, t. 105, f. 11. Grev. XI., t. 168, f. 85. Sacc. *Syll.* 1225.

Corky, subglobose, rugulose, resembling a pileus, 6-8 m.m. thick; stem short or obsolete; ostiola rather broad and prominent; asci cylindrical; sporidia large, navicular or boat-shaped, continuous, brown.

On rotten wood. Queensland. N. Zealand.

**1543. *Xylaria agariciformis*.** Cke. & Mass. Grev. XVII., 81.

Capitulum semiglobose (8 m.m. to 1 c.m. diam.), glaucous, dotted with the black punctiform ostiola, truncate or depressed, beneath black and sterile so as to leave a barren black ring round the stem; stem equal or a little attenuated downwards, 2-3 m.m. thick, 1 in. or more long, straight or flexuous, fuliginous; asci cylindrical; sporidia uniseriate, elliptical, rounded, or a little attenuated at the ends, at first binucleate, then opaque and dark brown,  $23-25 \times 6-8 \mu$ .

On stumps. Great Bight.

Section B. XYLOCORYNE. Fr.

Clubs everywhere fertile, stem velvety.

**1544. *Xylaria corniformis*.** Fr. S. V. S. 381. Sacc. *Syll.* 1239.

Stroma simple, neither forked nor branched, cylindrical, never compressed or dilated, rather thick, fragile, brown, then black, obtuse at the apex, more or less curved, horn-shaped, fixed by a villous substratum; perithecia subglobose, much crowded, minute, more or less protuberant, ostiola papillate, small; asci cylindrical, pedicellate,  $60-75 \times 6-7 \mu$ ; sporidia rounded at the ends, very obtuse, continuous, brown,  $8-10 \times 5 \mu$ .

On prostrate trunks. Tasmania.

**1545. *Xylaria aphrodisiaca*.** Well. & Curr. *Fung. Angol.* 280, t. 18, f. 3, 4. Grev. XI., t. 168, f. 104. Sacc. *Syll.* 1241.

Cæspitose, smooth, clubs subcylindrical (1-2 in. high), cinereous, brown, the whole surface unusually areolate; substance white, common base invested with a delicate brown tomentum; perithecia, asci, and sporidia (?).

On rotten trunks. Queensland.

Section C. XYLOSTYLA. Fr.

Clubs sterile at the apex, stem smooth.

**1546. *Xylaria digitata*.** Grev. *Fl. Edin.* 356. Sacc. *Syll.* 1283.

Stroma erect, thick, brown, velvety, then smooth, attenuated at the apex, rarely obtuse, sometimes divided into two or three dichotomous branches, very rarely more or less compressed, club continuous in a short stem; perithecia very numerous, a little prominent, rugose; asci cylindrical,  $120 \times 7 \mu$ ; sporidia fusiform, obtuse, unequal-sided, continuous, dark brown,  $18-20 \times 5-6 \mu$ .

On rotten wood. Victoria. N.S. Wales.

Section D. **XYLODACTYLA.** *Fr.*

Apex of the clubs sterile, stem villous.

**1547. Xylaria hypoxylon.** *Grev. Fl. Edin. 355. Sacc. Syll. 1260.*

Stroma erect, compressed and dilated, variously parted, rarely simple, black, villous about the base; perithecia ovate, a little prominent, densely crowded, rugose, sterile at the apex; stem usually shorter than the club; asci cylindrical, pedicellate,  $80 \times 7-8 \mu$ ; sporidia fusiform, obtuse, unequal-sided, becoming nearly black, continuous,  $12-14 \times 5-6 \mu$ .

On stumps. Gundawang. Queensland.

GENUS 12. **PORONIA.** *Willd.*

Stroma fleshy-coriaceous, at first clavate, then cup-shaped, stipitate or nearly sessile, whitish or blackish; perithecia immersed in the upper discoid face of the stroma, carbonaceous, black; sporidia continuous, brown.

**1548. Poronia punctata.** *Linn. Fr. Summa. Veg. Scan. 382. Sacc. Syll. 1321.*

Stroma erect, simple, at first clavate, soon open, cup-shaped, attenuated into a more or less long tomentose stem, externally black, disc white, punctate with the black ostiola; asci cylindrical; sporidia ovate, becoming black, involved in a hyaline mucus,  $18-26 \times 10-14 \mu$ .

On dung. Victoria. W. Australia. Tasmania.

**1549. Poronia oedipus.** *Mont. Ann. Sci. Nat. 1855. Sacc. Syll. 1322.*

Stroma erect, externally blackish, simple or branched, stem becoming smooth, rather long, thickened in a clavate manner at the base, the apex dilated into a cup, papillate with the prominent ostiola, at first concave, then flattened; asci subcylindrical,  $120 \times 24 \mu$ ; sporidia ovate, straight, becoming black, involved in a thick, hyaline, mucous stratum,  $28-30 \times 16 \mu$ .

On dung. Victoria. Queensland. N.S.Wales. (Fig. 198.)

**1550. Poronia pileiformis.** *Berk. Hook. Journ. 1842. Sacc. Syll. 1323.*

Stroma branched, almost even, the branches ending in pileiform cups, blackish; asci cylindrical; sporidia ovoid, acute at each end, guttulate, sooty brown,  $7-8 \mu$  long.

Queensland.

GENUS 13. **RHOPALOPSIS.** *Cooke.*

Very densely caespitose, clubs abbreviated, shortly stipitate, or crowded together on an intricate stroma; perithecia peripheral; sporidia continuous, brown.

\* *Stroma branched.*

**1551. *Rhopalopsis cetrarioides.*** *Well. & Curr. Fung. Ang.*, p. 282.=*Kretschmaria cetrarioides.* *Sacc. Syll.* 1489.

Stroma decumbent, lacinate, resembling in habit and mode of growth *Cetraria tristis*, lacinia dilated, multifid, passing into perithecia at the apices; perithecia densely aggregated, sometimes compressed, irregular; sporidia lanceolate, continuous, brown.

On trunks. Queensland.

\*\* *Stroma simple.*

**1552. *Rhopalopsis angolense.*** *Well. & Curr. Ang. Fung.* p. 282, t. 17, f. 19.=*Kretschmaria angolense.* *Sacc. Syll.* 1519.

Clavate, black, bright and shining; perithecia densely aggregated, ostiola minute, a little prominent; sporidia dark brown, ovate or slightly curved, 12-15  $\mu$  long.

On rotting bark. Queensland. (Fig. 199.)

GENUS 14. **USTULINA.** *Tul.*

Stroma superficial, somewhat effused, rather thick, determinate; hymenium bearing conidia, pulverulent, whitish, becoming cinereous, then rigid, carbonaceous, black, naked, often becoming hollow; perithecia immersed, large, horny; asci pedicellate; sporidia ovoid-fusiform, continuous, sooty-brown.

**1553. *Ustulina vulgaris.*** *Tul. Sel. Fung. Carp.*, t. III., f. 1-6. *Sacc. Syll.* 1328.

Stroma superficial, rather effused, repand, pulvinate, large, thick, undulated, at length quite black, carbonaceous, fragile, hollow within; perithecia large, ovate, densely crowded, peripheral, with a prominent ostiolum; asci cylindrical,  $250 \times 8-10 \mu$ ; sporidia fusiform, unequal sided, curved, turning black,  $32-40 \times 8-13 \mu$ .

On branches. Queensland. (Fig. 200.)

GENUS 15. **NUMMULARIA.** *Tul.*

Stroma orbicular, cup-shaped, limited on the matrix by a black line, blackish, marginate, the margin almost sterile; perithecia peripheral, immersed in the stroma, large, numerous, black; asci cylindrical; sporidia subellipsoid, continuous, brown.

a. *Disc concave.*

**1554. *Nummularia Baileyi.*** *B. & Br. Cooke Grev.* XII., 6. *Sacc. Syll.* 6359.

Erumpent, orbicular, cup-shaped, margin thickened (4-7 m.m. diam.), elevated, disc rough with the prominent ostiola; perithecia elliptical-ovate, immersed in the centre; asci cylindrical; sporidia elliptic, brown, variable, 13-20  $\mu$  long.

On wood. Queensland.

**1555. *Nummularia lutea*. (A. & S.) Fries. Sacc. Syll. 1528.**

Stroma superficial on decorticated wood, orbicular, thick, cup-shaped; margin rugose, surface brown, then blackish, yellow within; perithecia in many rows, densely crowded, ovate or subglobose; asci cylindrical, subsessile; sporidia small, ovate, straight, brownish,  $5-6 \times 3 \mu$ .

On wood. Queensland.

b. *Disc convex*.

**1556. *Nummularia Bulliardii*. Tul. Carp. Fun. II., 43, t. 5, f. 11. Sacc. Syll. 1524.**

Stroma, on destruction of the periderm, emergent, superficial and free, plane, for the most part determinate, orbicular, or oval, rarely irregular, broadly effused, quite black without and within, punctate with the prominent minute ostiola, at first forming a dirty white fleshy stratum, covered by the epidermis; perithecia rather large, ovate, black, crowded in the stroma; asci cylindrical;  $100-120 \times 10 \mu$ ; sporidia oval, approaching globose, blackish,  $12-14 \times 9-10 \mu$ .

On branches. Tasmania.

**1557. *Nummularia exutans*. Cke. Texas Fungi 143. = *Anthostoma exutans*. Sacc. Syll. 1105.**

Broadly effused, marginate, black, at first developed beneath the cuticle, then erumpent, throwing off the epidermis, ostiola punctiform, depressed; asci cylindrical; sporidia elliptic, attenuated at the ends, brown, continuous, uniguttulate,  $15 \times 8 \mu$ .

On branches. Victoria. (Fig. 201.)

**1558. *Nummularia australis*. Cooke Grev. XII., 6. Sacc. Syll. 6360.**

Stroma developed within the bark, then erumpent, effused, determinate, often discoid, convex, unpolished, black; perithecia subglobose, small, 1-2 seriate, ostiola scarcely visible; asci cylindrical; sporidia very variable in form, some fusiform,  $21 \times 9 \mu$ , others ovate,  $12 \times 8 \mu$ , others intermediate, brown.

On branches. N.S. Wales.

**1559. *Nummularia microplaca*. B. & C. Cooke Pyr. No. 827. = *Anthostoma*. Sacc. Syll. 1112.**

Thin, orbicular, sparingly dotted with the minute papillate ostiola, black; asci tapering, stipitate ( $37-50 \times 4-5 \mu$ ); sporidia ellipsoid, unequal-sided, dingy olive,  $5-6 \times 3\frac{1}{2}-4 \mu$ .

On bark. Queensland.

**1560. *Nummularia pusilla*. Sacc. Hedw. 1889.**

Stroma small for the genus, flattened, becoming black, elliptic or oblong, or sinuous (2 m.m. diam., or 4-5 m.m. long, 2 m.m. wide, scarcely  $\frac{1}{2}$  m.m. thick), by the falling away of the cuticle soon superficial, everywhere fertile, blackish, rather shining, disc

even, ostiola punctiform, rather crowded, not prominent; perithecia crowded, oblong, often unequal ( $\frac{1}{3}$  m.m. high,  $\frac{1}{4}$  m.m. thick); asci cylindrical; sporidia broadly fusoid, nearly straight, rather acute at each end,  $18-22 \times 6 \mu$ , guttulate, sooty brown.

On branches of *Bursaria spinosa*. Callington.

GENUS 16. **DALDINIA**. *DeNot.*

Stroma superficial, subsphaeroid, with a black, carbonaceous cortex, fibrous within, concentrically zoned; asci cylindrical; sporidia ovoid or oblong, brown; perithecia wholly immersed in the stroma, not protuberant; ostiola umbilicate.

**1561. Daldinia concentrica.** *Bolt. DeNot. Schema. 198.*  
*Sacc. Syll. 1515.*

Stroma sphaeroid or subsphaeroid, or hemispherical, rarely obovoid, internally zoned with concentric strata, black, or brown, turning black (2.5 c.m. diam.); perithecia obovoid, angular by pressure, ostiola small, punctiform; asci cylindrical,  $80-110 \times 8-10 \mu$ ; sporidia ellipsoid, often unequal-sided, brown,  $12-15 \times 7-10 \mu$ .

On trunks. Victoria. Queensland. N.S.Wales. W. Australia. King's Island. Tasmania. (Fig. 202.)

**1562. Daldinia vernicosa.** *Schwz. DeNot. Schema. 198.*  
*Sacc. Syll. 1516.*

Large (25-30 m.m. high, 12-14 m.m. thick), rather turbinate, attenuated beneath into a thick stem, surface black, varnished, even, internally white, concentrically stratose; perithecia in many rows, minute, black, ostiola small; asci narrowed; sporidia oblong,  $20 \times 6\frac{1}{2}-7 \mu$ .

On trunks. Victoria.

GENUS 17. **HYPOXYLON**. *Bull.*

Stroma subsphaeroid or hemispherical, or sometimes more or less effused, crust-like, at first conidioferous, then naked, between woody and corky, blackish or rust-colour; perithecia immersed; sporidia continuous, brown.

\* **MACROXYLON.**

Large, indurated, irregular.

**1563. Hypoxylon sclerophlæum.** *B. & C. Linn. Journ. XIII., 177. Sacc. Syll. 1341.*

Expanded, pulvinate, thick, surface rubiginous, a little rugose from the prominent ostiola, substance hard, black; perithecia oblong; asci cylindrical; sporidia brown, continuous,  $12 \times 5 \mu$ .

On trunks. S. Australia.

**1564. Hypoxylon placentæforme.** *B. & C. Cuban Fungi No. 815. Sacc. Syll. 1535.*

Large, depressedly pulvinate (40-50 m.m. long), margin inflexed, free, substance black, surface rusty brown, then black; perithecia oblong, immersed, ostiola papillate; sporidia somewhat elliptic, sooty brown, 12-14 m.m. long.

On old trunks. Queensland.

**1565. Hypoxylon (Macroxylon) stratosum.** *Sacc. Pug. Austr. p. 13, fig. 1.*

Stroma hemispherical, large, superficial, between corky and woody, then rather carbonaceous (3-4 c.m. broad), everywhere sooty brown, externally even, somewhat varnished, covered with the punctiform ostiola, internally composed of numerous concentric strata, corky and shining; perithecia seated in the outer stratum, oblong, black, with short necks. Asci (?). Sporidia ellipsoid, sooty brown, continuous ( $12 \times 5 \mu$ ).

On bark. Queensland.

**\*\* SPHÆROXYLON.**

Stroma superficial, globose, or nearly so.

**a. Stroma coloured.**

**1566. Hypoxylon coccineum.** *Bull. Champ. 174. Sacc. Syll. 1333.*

Stroma erumpent, then superficial, nearly globose, violet brown, or fawn-colour, then brick-red, when mature always rubiginous, internally sooty black, solitary or connate, when fully developed minutely mamilllose. Perithecia minute, ovate, peripheral, crowded; asci cylindrical,  $70-88 \times 5-7 \mu$ . Sporidia obovate, unequal-sided, blackish brown,  $10-12 \times 4-5 \mu$ , often biguttulate.

On branches. Victoria. Tasmania. (Fig. 203.)

**1567. Hypoxylon argillaceum.** *Pers. Syn. 10. Sacc. Syll. 1337.*

Stroma erumpent, then superficial, rather globose, distinct, rarely connate, clay-coloured, becoming black within; perithecia ovate, small, crowded, rather prominent, minutely mamilllose; asci cylindrical,  $140 \times 16 \mu$ . Sporidia broadly ovate, quite obtuse, unequal-sided, becoming blackish, involved in a thin, hyaline, mucous stratum,  $22-24 \times 10-12 \mu$ .

On trunks. Tasmania.

**1568. Hypoxylon rutilum.** *Tul. Carp. Fungi II., 38. Sacc. Syll. 1344.*

Stroma erumpent, on corticated branches, soon free, superficial, pulvinate, for the most part of irregular form, often depressed at the apex, distinct, connate, or confluent, more or less effused on naked wood. Young stroma clay-coloured, fawn, or bright red, when mature red-brown or dark red; perithecia small, subglobose, densely crowded, minutely mamillate, not prominent; asci cylindrical,  $56-80 \times 5-8 \mu$ . Sporidia oblique or straight, in single rows, ovate, obtuse, unequal-sided, becoming blackish,  $8 \times 4-5 \mu$ .

On bark and wood. Victoria. Queensland.

**1569. Hypoxylon fuscum.** *Pers. Fries. S. V. S. 384. Sacc. Syll. 1368.*

Stroma erumpent, then superficial, free, spot-like, depressedly pulvinate, hemispherical, rarely subglobose, purple brown, then

black; perithecia globose, crowded, rather prominent, minutely mamillate. Asci cylindrical. Sporidia ovate, obtuse, more or less unequal-sided, blackish,  $12-16 \times 5-7 \mu$ .

On bark. Queensland.

b. *Stroma black.*

- 1570. *Hypoxylon multiforme.*** *Fr. Summ. Veg. Scan.* 384.  
*Sacc. Syll.* 1376.

Stroma erumpent, on corticate branches, girt by the ruptured cuticle, or at length free, superficial, hemispherical, thick, subglobose, elliptic, or flattened, or convex, often deformed, on naked wood more or less effused, superficial, stroma for the most part connate or confluent, at first rubiginous, then black, even; perithecia rather large, globose, papillate, on tuberculose protuberances. Asci cylindrical,  $72-100 \times 6 \mu$ . Sporidia fusiform, unequal-sided, brown,  $10-12 \times 4-5 \mu$ .

On bark or wood. Victoria. W. Australia. Tasmania.

- 1571. *Hypoxylon cohærens.*** *Pers. Fries. S. V. S.* 384.  
*Sacc. Syll.* 1370.

Stroma erumpent, soon superficial, free, subglobose, or flattened, pulvinate, thick, rarely confluent, dirty brown, then black. Perithecia rather large, globose or ovate, minutely papillate; asci cylindrical. Sporidia ovate, obtuse, unequal-sided, blackish,  $12 \times 6 \mu$ .

On branches. Tasmania.

\*\*\* CLITOXYLON.

Stroma pulvinate, more or less convex, not effused.

\* *Stroma coloured.*

- 1572. *Hypoxylon hæmatostroma.*** *Mont. Syll.* 737. *Sacc. Syll.* 1435.

Irregularly effused, confluent, convex, purplish black; perithecia peripheral, elongated-clavate, immersed, rather prominent, stroma blood-red. Sporidia navicular ( $10-12 \times 3\frac{1}{2} \mu$ ), brown.

On bark. Queensland.

c. *Stroma black.*

- 1573. *Hypoxylon annulatum.*** *Schw. Mont. Syll.* 213.  
*Sacc. Syll.* 1384.

Hemispherical, confluent, becoming black, internally of the same colour; perithecia subglobose, ostiola in the centre of a dilated disc, with a rather prominent annulate margin; asci cylindrical. Sporidia ovoid, curved, sooty brown,  $9 \times 3 \mu$ .

On bark and wood. Tasmania.

- 1574. *Hypoxylon marginatum.*** *Schwz. Amer. Bor.* 1176.  
*Sacc. Syll.* 1414.

Hemispherical, confluent, finally black, of the same colour within ostiola seated singly in a distinct marginate disc; asci cylindrical



shortly stipitate. Sporidia somewhat kidney-shaped, often binucleate,  $7-9 \times 4-5 \mu$ .

On bark and wood. Queensland.

\*\*\* PLACCOXYLON.

Stroma broadly and vaguely effused

a. *Stroma coloured.*

**1575. Hypoxylon hæmatites.** *Lev. Grev. xi., 133. Sacc. Syll. 5984.*

Effused, crustaceous, indeterminate, rugose, bright orange red, at length ferruginous red, black within; perithecia very densely crowded, subglobose, rather prominent, pierced; asci cylindrical; sporidia elliptical, attenuated at each end, dark brown,  $18 \times 5 \mu$ .

On wood. Queensland.

**1576. Hypoxylon capnodes.** *Berk. Hook. Journ. 1843, 72. Sacc. Syll. 1113.*

Effused, greyish-black, nearly even, but punctate with the prominent ostiola. Asci cylindrical, sporidia ellipsoid,  $10-12 \times 5-6 \mu$ , brown, then dark sooty brown, minutely guttulate.

On branches. Queensland. W. Australia.

**Hypoxylon fusco-flavum.** *B. & Br. in Bailey's List, Queensland Fungi.*

As no specimen can be found in *Herb. Berk.* and no diagnosis, it must be regarded as an empty name.

b. *Stroma black.*

**1577. Hypoxylon oodes.** *B. & Br. Ceylon Fungi 1071. Sacc. Syll. 1456.*

Broadly effused, coffee-coloured, becoming black, perithecia sparingly confluent, globose, opaque; ostiola papillate, encircled by a small impressed ring. Asci linear; sporidia shortly cymbæform, binucleate, brown;  $15-17 \times 7 \mu$ .

On rotten wood. Queensland.

**1578. Hypoxylon punctulatum.** *B. & Rav. Grev. iv., 94. Sacc. Syll. 1534.*

Very broadly effused, black, girt by the ruptured epidermis, quite even, perithecia small, ovoid, crowded, ostiola punctiform, impressed. Asci subclavate,  $90 \times 9 \mu$ . Sporidia ellipsoid, somewhat truncate at the ends,  $7-8 \times 4-5 \mu$ , at first hyaline, then brown.

On rotten branches. Queensland.

**1579. Hypoxylon serpens.** *Fr. Sum. Veg. Scan. 384. Sacc. Syll. 1448.*

Stroma on wood, rarely on bark, effused in a narrow, often short, thin crust, superficial, variable in form, irregular, for the most part longitudinally expanded, sometimes oval or elliptic, sometimes linear, more or less elongated, distinct, or confluent, dark brown or quite black, opaque; perithecia subglobose, densely

crowded, rather large, rounded at the vertex, or rarely papillate. Asci cylindrical,  $75-100 \times 6-8 \mu$ . Sporidia oblong, rounded at the ends, unequal sided, curved, rarely straight, becoming blackish,  $12-14 \times 5-6 \mu$ .

On rotten wood. Queensland.

**1580. Hypoxylon Archeri.** *Berk. Fl. Tasm.* II., 280. *Sacc. Syll.* 1449.

Quite black, effused; perithecia subglobose, truncate, rather rugose, ostiola papillate, in the centre of a depressed disc; sporidia short, sooty brown,  $10 \times 4-5 \mu$ .

On rotten wood. Tasmania.

**1581. Hypoxylon ellipticum.** *Cke. & Mass. Grev.* XVII., 70.

Parallel, elliptic ( $3-5 \times 2$  m.m.), convexo-plane, black, opaque, of the same colour within. Ostiola minute, crowded, punctiform. Asci cylindrical, sporidia fusiform, continuous, sooty black, at first guttulate,  $23-25 \times 6-7 \mu$ .

On naked wood. Queensland.

*Family III. DOTHIDEACEÆ. Fr.*

Composite, stromatic, pulvinate, etc., coriaceous or carbonaceous, blackish. Perithecial cells homogeneous with the substance of the stroma, and scarcely distinct from it, papillate or pierced.

*Sub-Family 1. Dothideoidei.*

GENUS 18. **PHYLLACHORA.** *Fckl.*

Stroma somewhat clypeate or shortly effused, for the most part growing on leaves.

**1582. Phyllachora graminis.** *Pers. Obs.* I., t. 1, f. 1, 2. *Sacc. Syll.* 5182.

Stroma distinct or confluent, innate in the parenchyma of the leaf, rather prominent, covered by the adnate, shining, blackened epidermis, variable in form, for the most part oblong or lanceolate, black, unequal, rugulose (about 1 m.m. long); perithecia immersed, ostiola latent. Asci cylindrical,  $78-80 \times 7-8 \mu$ . Sporidia ovoid, simple, usually including a large guttule, hyaline,  $8-12 \times 4-5 \mu$ . Spermatia falcate,  $16 \times 1\frac{1}{2}-2 \mu$ , hyaline, in the young cells.

On leaves of grass.

**1583. Phyllachora rhytismoides.** *Ca. Ic. Fungi* IV., f. 122. *Sacc. Syll.* 5098.

Immersed, black, shining, spots decoloured; pustules black, minute, pulvinate, verrucose, ostiola perforating the warts; stroma hard, thick, black; perithecia crowded on the upper or under surface, immersed, rounded, white within. Sporidia ovoid, hyaline,  $16-18 \mu$  long.

On phyllodes of *Acacia*. Queensland.

**1584. *Phyllachora trifolii*.** Pers. *Fckl. Symb.* 218. Sacc. *Syll.* 5184.

Mycelium developed in the parenchyma of the leaves, forming brownish spots, of varied size and form, at first producing conidia (*Polythrincium trifolii*). Stroma subrotund, tuberculiform, rather prominent, connate, black. Asci clavate, sporidia elliptic, continuous, hyaline.

On leaves of clover. Victoria.

**1585. *Phyllachora alpinia*.** Cke. & Mass. *Grev.* xvii., 56.

Spots brown, then pitch black, elongated, linear or lanceolate, here and there confluent. Stroma black, shining, rugulose, orbicular or confluent. Asci clavate, stipitate. Sporidia elliptic, continuous, hyaline,  $11-14 \times 5-6 \mu$ .

On fading leaves of *Alpinia cœrulea*. Queensland. (Fig. 204.)

*Possibly the following is the same species.*

***Phyllachora alpinia*.** Sacc. & Berl. Sacc. *Syll.* 7275.

Stroma oblong, obtusely undulate, shining black, often seated upon decoloured spots; cells rather large, few, asci and sporidia? (immature).

On leaves of *Alpinia cœrulea*. Queensland.

**1586. *Phyllachora anceps*.** Sacc. *Hedwigia* 1890, 156.

Stroma oblong or elongated, immersed, a little inflating the matrix, and making the surface brownish; perithecia, or cells, parallel, seriate, globose, attenuated upwards, and opening by a punctiform ostiolum ( $\frac{1}{4}-\frac{1}{3}$  m.m. broad), substance thin, olive brown; asci very long, cylindrical, rounded above, sessile ( $195 \times 8 \mu$ ); sporidia navicular-oblong, rather unequal-sided ( $20-22 \times 6 \mu$ ), hyaline; paraphyses filiform, guttulate.

On culms of *Scirpus nodosus*. Tammda.

**1587. *Phyllachora maculata*.** Cooke *Grev.* xx., 4.

Stroma gregarious, on bullate tawny spots of the living leaves ( $\frac{1}{2}-1$  c.m. broad), black, semi-immersed; asci clavate; sporidia elongated, elliptical, a little narrowed at each end, hyaline,  $22-25 \times 8 \mu$ .

On leaves of *Eucalyptus*. Victoria.

**1588. *Phyllachora fimbristylis*.** B. & Br. Sacc. *Syll.* 4089.

=*Dothidea fimbristylis*. B. & Br. *Brisb. p.* 222, t. 29, f. 28-30.

Stroma black, covered by the epidermis, ostiola granulate ( $1\frac{1}{2}-2\frac{1}{2}$  m.m. long); asci clavate, rounded at the apex, stipitate; sporidia fusoid, curved, multiguttulate, hyaline ( $17-18 \times 2-3 \mu$ ).

On *Fimbristylis*. Queensland.

**1589. *Phyllachora junci*.** Fr. *Syst. Myc.* II., 428. Sacc. *Syll.* 5144.

Stroma innate, more or less longitudinally effused, thin, brown, or dark brown, epidermis at first unchanged, tuberculose with the

prominent cells, at length brownish, and blackish above each cell, longitudinally cracked; cells seriate, at first immersed, then emergent, sphaeroid or compressed, minute; asci cylindrical; sporidia oblong, binucleate, hyaline, or slightly coloured, not constricted at the middle,  $9-10 \times 3-3\frac{1}{2} \mu$ .

On *Juncus*. Victoria.

\*\*\* DOTHIDELLA. *Sporidia uniseptate, hyaline.*

**1590. Phyllachora (Dothidella) apiculata.** *Sacc. & Berl. F. Austr. p. 4, t. 52, f. 8. Sacc. Syll. 7300.*

Stroma epiphyllous, on ochraceous-brown spots, loosely gregarious, covered at first with the very thin epidermis, pulvinate-depressed, irregularly rounded at the edge, shining black ( $1-1\frac{1}{2}$  m.m. diam.), with few cells, ostiola very short and obtuse; asci rather tapering, rounded at the apex ( $75-80 \times 18-20 \mu$ ), tetrasporous; sporidia ovate-oblong, rounded at the ends, shortly apiculate, uniseptate, slightly constricted, hyaline,  $26-28 \times 11-13 \mu$ .

On leaves of *Litsaea dealbata*. Queensland.

**1591. Phyllachora (Dothidella) tephrosiæ.** *Lev. Ann. Sci. Nat. 1846, 260. Sacc. Syll. 5260.*

Stroma epiphyllous, innate, orbicular, plane, then convex, cinereous; cells globose, crowded, immersed, ostiola punctiform, black; asci short, oblique; sporidia oblong-lanceolate ( $22 \times 5 \mu$ ), uniseptate.

On leaves. W. Australia.

**1592. Phyllachora (Dothidella) inæqualis.** *Cooke Grev. xx., 5.*

Stroma erumpent, then subsuperficial, on both surfaces, nearly orbicular (about 2 m.m. diam.), black, shining, with three to five elevations corresponding to the cells; asci clavate, octosporous; sporidia cylindrically elliptical, with one septum about one-fourth the length, dividing the sporidium into two unequal cells, one of which is three times the length of the other ( $20-24 \times 6 \mu$ ), pale amber colour.

On dead leaves of *Eucalyptus*. Victoria. (Fig. 205.)

Some cavities contain stylospores which are elongated, fusiform, curved, acute at both ends, 3-5 septate ( $50-55 \times 3 \mu$ ), hyaline.

MONTAGNELLA. *Sporidia 3-septate, coloured.*

**1593. Phyllachora (Montagnella) eucalpyti.** *Cke. & Mass. Grev. xvi., 5.*

Orbicular, convex, shining, black ( $2-3$  m.m. diam.), even, with few cells; asci pyriform, 4-spored; sporidia subfusiform, rounded at the ends, one then three septate, not constricted, for some time hyaline, at length pale brown,  $35-40 \times 10 \mu$ .

On dead leaves of *Eucalyptus*. Victoria.

**1594. Phyllachora (Montagnella) rugulosa.** *Cooke Grev.*  
xx., 5.

On the upper or under surface. Stroma thin, suborbicular (1 m.m. diam.), black, depressed, rugose, cells with many asci; asci clavate; sporidia lanceolate-triseptate, pale olive,  $20 \times 6 \mu$ .

On leaves of *Eucalyptus*. Victoria. (Fig. 208.)

GENUS 19. **DOTHIDEA.** *Fries.*

Stroma erumpent, pulvinate, tumid or depressed, suborbicular, or confluent and elongated, black, somewhat coriaceous; perithecia (cells) immersed, ostiola rather prominent; asci 4-8 spored; sporidia elongated or ovoid, septate, olive or sooty brown.

\* **BAGNISIELLA.** *Sporidia continuous, hyaline.*

**1595. Dothidea (Bagnisiella) rugulosa.** *Cooke Grev.*  
xix., 45.

Epiphyllous, or hypophyllous, gregarious, globose, black, rugulose ( $\frac{1}{2}$ - $\frac{3}{4}$  m.m.); cells peripheral, minute; asci oblong, 8-spored; sporidia cylindrically elliptical, hyaline,  $22-25 \times 4 \mu$ .

On leaves of *Eucalyptus*. Victoria. (Fig. 207.)

**1596. Dothidea (Bagnisiella) endopyria.** *Sacc. Hedwigia*  
1890, 155.

Stroma somewhat superficial, minute, disciform, black (scarcely  $\frac{1}{2}$  m.m. diam.), here and there crowded, surface rugulose, coriaceous, white within, with few cells; cells globose, substance bright fiery orange, rather soft, pierced by a small ostiolum; asci clavulate, shortly stipitate,  $45 \times 9-10 \mu$ , sporidia (immature) ovoid-oblong, hyaline, paraphyses cylindrical, branched, guttulate.

On leaves of *Myoporum platycarpum*. Caromby.

**1597. Dothidea (Bagnisiella) catervaria.** *Berk. Dec. 447.*  
*Sacc. Syll.* 5109.

Pustules minute, crowded in orbicular or irregular spots, ostiola papillæform, asci short, attenuated downwards, sporidia suborbicular, minute, hyaline.

On leaves of *Ficus*. Queensland.

\*\* **COCCODEA.** *Stroma subglobose; sporidia triseptate, hyaline.*

**1598. Dothidea (Coccodea) globulosa.** *Cke. & Mass. Grev.*  
xvii., p. 42.

On both surfaces, globose, rugulose, subsuperficial, black, opaque ( $1-1\frac{1}{2}$  m.m. diam.), cells peripheral, globose, immersed, small; ostiola obsolete, asci clavate; sporidia oblong, triseptate, hyaline,  $25 \times 7 \mu$ .

On leaves of *Tasmania aromatica*. Tasmania. (Fig. 206.)

Sub-Family 2. **RHYTISMOIDEÆ.**

GENUS 20. **RHYTISMA.** *Fries.*

Receptacles innate in the blackened, rather crust-like matrix, which is simple, dimidiate, at first closed, then cracked in fissures or frustules distinct from the disc; asci subclavate; sporidia hyaline.

- 1599. *Rhytisma hypoxanthum*.** *B. & Br. Proc. Linn. Soc. N.S.W.* v., 89. *Linn. Trans.* 1883, p. 71.

Spots irregular, thickened, buff-coloured; stroma bright shining black, with a distinctly defined margin, here and there slightly granulated, conidia oblong,  $8\ \mu$  long.

On leaves. Queensland. (Fig. 211.)

MARCHALIA. *Sporidia uniseptate, hyaline.*

- 1600. *Rhytisma flicinum*.** *B. & Br. Ceylon Fungi No.* 1127. = *Marchalia flicina*. *Sacc. Syll.* 3027.

Spots rather orbicular, thin; cells elongated, flexuous, thin; asci clavate, sporidia oblong, narrow, uniseptate, 12-14  $\mu$  long.

On fronds of *Alsophila*. Queensland.

Sub-Family 3. **Stigmatoideæ.**

GENUS 21. **TRABUTIA.** *Sacc. & Roum.*

Stroma black, radiating, flattened, perithecia adnate to the stroma, ostium pierced, sporidia ovoid oblong, hyaline.

- 1601. *Trabutia parvicapsa*.** *Cooke. Grev.* xx., 5.

Innate; perithecia on brown elliptical spots, on both surfaces, convex, rather crowded, small, black, somewhat shining, numerous. Asci clavate, tetrasporous or octosporous. Sporidia lanceolate, rounded at the ends, continuous, granular within, hyaline, 35-40  $\times$  12  $\mu$ . Whole contents of the perithecia with the pink tinge.

On phyllodes of *Acacia*. Victoria.

Besides the difference in the sporidia, this differs from *T. phyllodii* in the much smaller and more numerous perithecia.

- 1602. *Trabutia phyllodii*.** *Cke. & Mass. Grev.* xix., 60.

Perithecia innate, convex, brown, 4 to 10, seated on orbicular stromatoid spots, pierced with a pore at the apex, for some time covered by the discoloured cuticle. Asci clavate-cylindrical, octosporous. Sporidia oblong, straight or very slightly curved, continuous, grumous within, 20-24  $\times$  10  $\mu$ , paraphyses numerous, slightly tinged with brown.

On phyllodes of *Acacia longifolia*. Victoria.

- 1603. *Trabutia eucalypti*.** *Cke. & Mass. Grev.* xvii., 43.

Epiphyllous; stroma coriaceous, suborbicular (3 m.m. diam.), convex, rugulose, black, shining, perithecia innate in the stroma, protuberant, pierced with a minute ostium. Asci cylindrically clavate, sporidia elliptically lanceolate, continuous, hyaline, 139  $\times$  8-9  $\mu$ .

On leaves of *Eucalyptus*. Victoria. Tasmania. (Fig. 209.)

GENUS 22. **PARODIELLA.** *Speg.*

Perithecia superficial, globose, without mouth, black, adnate by the base to leaves. Asci cylindrically clavate; sporidia bicellular, sooty brown.

**1604. Parodiella grammodes.** Kunze. Dothidea perisporioides. *B. & C. N.A. Fungi* 880. *Sacc. Syll.* 2711.

Perithecia globose (150-200  $\mu$  diam.), even, black, superficial, adnate by the base, densely gregarious, often occupying the whole surface; somewhat membranaceous, sooty olive. Asci clavate, 120  $\times$  20-24  $\mu$ , sporidia elliptically biconic, uniseptate and constricted in the middle, upper cell a little swollen, obtuse at the ends, fuliginous, 28-30  $\times$  10-11  $\mu$ .

On living leaves of *Leguminosæ*. Victoria. N.S. Wales. (Fig. 210).

*Family IV. MELOGRAMMÆ. Nike.*

Perithecia formed from the stroma, or confluent with it, nearly free at the apex, for the most part destitute of a neck.

GENUS 23. **SARCOXYLON.** Cooke.

Stroma subglobose, pallid, between fleshy and coriaceous, perithecia membranaceous, immersed in the periphery.

**1605. Sarcoxylon compunctum.** Jungh. Cooke *Grev.* XIII., p. 107. *Sacc. Syll.* 1231.

Globose, deformed, constricted at the base (2-8 in. diam.), smooth, pallid tan-colour, punctate with black ostiola, internally pallid, radiately fibrous; perithecia large, peripheral, globose, ovoid, immersed. Sporidia ovoid-oblong, 12-15  $\times$  7-8  $\mu$ , brown.

On prostrate trunks. Queensland. (Fig. 196.)

GENUS 24. **GIBELLIA.** Sacc.

Stroma cutaneous-erumpent, definitely depressedly pulvinate, black, paler within, punctulate above with the scarce prominent ostiola; perithecia globose; asci tapering, sessile. Sporidia globose-ellipsoid, continuous, hyaline.

**1606. Gibellia dothideoides.** Sacc. & Berl. *Sacc. Syll.* 7446.

Stroma depressedly pulvinate, loosely gregarious (2  $\times$  1-1½ m.m.), at length naked by the falling away of the cuticle, black, paler within, ostiola punctiform, perithecia globose, ¼-½ m.m., 6-10 on a stroma. Asci tapering, sessile, 90-100  $\times$  20-25  $\mu$ . Sporidia globosely-ellipsoid, 18-20  $\times$  12-14  $\mu$ , guttulate, hyaline.

On bark. Queensland.

GENUS 25. **MELOGRAMMA.** Tul.

Stroma subglobose, depressed, cellular; perithecia immersed, adnate; sporidia ovate or elongated.

\* *Sporidia uniseptate, brown.*

**1607. Melogramma rubricosa.** Fr. *Elen.* II., 63. *Sacc. Syll.* 2814.

Deformed, tuberculose, rugose and cracked, rubiginous, greyish white within, perithecia peripheral, immersed, black, shining;

asci cylindrical,  $110-120 \times 12-14 \mu$ ; sporidia ovoid-oblong,  $15-16 \times 9-10 \mu$ , uniseptate, slightly constricted, sooty brown. Spermatia ovoid,  $2-3 \times 1 \mu$ , hyaline.

On bark. Queensland. W. Australia. (Fig. 212.)

*Family V. DIATRYPÆ. Fries.*

Perithecia immersed in a heterogeneous stroma.

GENUS 26. **DIATRYPE. Fries.**

Stroma heterogeneous from the substance of the matrix, erumpent, almost superficial, effused, or discoid. Perithecia immersed in the stroma. Asci stipitate. Sporidia allantoid, minute, hyaline.

**1608. *Diatrype glomeraria.* Berk. Fl. N. Zeal. 205, t. 106, f. 13. Sacc. Syll. 740.**

Erumpent, angular, or confluent and elongated; stroma moderate, pallid; perithecia ovate, with a short neck; ostiola obscure; asci clavate; sporidia 8, curved, allantoid,  $14-15 \mu$  long.

On branches of *Rhipigonum parviflorum*. Victoria. New Zealand. (Fig. 213.)

**1609. *Diatrype stigma.* Hoffm. Fr. S. V. S. 385. Sacc. Syll. 705.**

Stroma erumpent, casting off the epidermis, at length naked, long and broadly effused, flattened, at length black (1 m.m. thick); perithecia ovoid, ostiola rather immersed, rather plane, entire or four-lobed; asci pedicellate ( $30-50 \times 4-6 \mu$ ); sporidia allantoid, hyaline ( $6-12 \times 1\frac{1}{2}-2 \mu$ ).

On branches. Queensland.

**1610. *Diatrype chlorosarca.* B. & Br. Ceylon Fungi No. 1080. Sacc. Syll. 715.**

Small, pustulate, orbicular; green within, plane above. Asci clavate. Sporidia allantoid, hyaline,  $7-9 \mu$  long.

On branches. Queensland.

*Family VI. VALSÆ. Fries.*

Composite. Stroma formed from the changed matrix. Perithecia distinct, circinating, or in a single row.

GENUS 27. **VALSA. Fries.**

Perithecia carbonaceous, perfect, circinating, elongated above into converging necks; ostiola erumpent, joined together or ending in a common disc.

\* **EUTYPELLA. Ostiola sulcate.**

**1611. *Valsa (Eutypella) stellulata.* Fries Syst. Myc. II., 381. Sacc. Syll.**

Subrotund, immersed; stroma white or dirty white, circumscribed; ostiola short, ovate-globose, radiately stellate; asci elliptical; sporidia biserial, simple, sausage-shaped, slightly curved, hyaline  $8-12 \times 1\frac{1}{2}-2 \mu$ .

On branches. Victoria.



\*\*EUVALSA. *Ostiola not sulcate.***1612. Valsa echidna.** *Cooke Grev. ix., 4. Sacc. Syll. 498.*

Erumpent, perithecia 10-20, nestling in a white pulverulent stroma; ostiola cylindrical, elongated, flexuous, thrust out; asci numerous, clavate, minute,  $20-25 \times 6 \mu$ . Sporidia thin, curved, hyaline,  $4 \mu$  long.

On bark. Queensland. N.S. Wales. (Fig. 214.)

*Family VII. EUTYPEÆ.*

Stroma broadly and indefinitely effused, formed from the more or less changed matrix. Perithecia immersed in the stroma, for the most part densely gregarious.

GENUS 28. **CRYPTOVALSA.** *Ces.*

Stroma effused, as in *Eutypa*; asci many-spored; sporidia allantoid, hyaline.

**1613. Cryptovalsa elevata.** *Berk. Sacc. Syll. 702.—Diatrype elevata. Berk. Hook. Journ. 1845, 298.*

Elongated, emergent, black or grey; perithecia gregarious, globose, of medium size, immersed in the wood; ostiola conical, punctiform at the vertex; asci clavate, polysporous; sporidia allantoid, pale olive,  $15-17 \mu$  long.

On dead branches. W. Australia. Tasmania. (Fig. 215.)

GENUS 29. **EUTYPA.** *Tul.*

Stroma broadly effused, on bark or wood; ostiola small; asci eight spored; sporidia allantoid, hyaline.

**1614. Eutypa lata.** *Tul. Carp. Fun. II., 86. Sacc. Syll. 637.*

Stroma long and broadly effused, contiguous, innate in the wood or bark, surface unequal from the irregularly emergent perithecia, fuscous or cinereous, at length black; perithecia immersed, more or less protuberant, sphaeroid ( $\frac{1}{2}$  m.m. diam.), with very short necks, or none; ostiola obtusely conoid, entire. Asci cylindrically clavate,  $48 \times 4-5 \mu$ . Sporidia elongated, curved or nearly straight,  $8-12 \times 1\frac{1}{2}-2 \mu$ , hyaline, pale tawny.

On wood and bark. Tasmania. (Fig. 216.)

**1615. Eutypa polyscia.** *B. & Br. Sacc. Syll. 6286.—Sphaeria polyscia. B. & Br. Proc. Linn. Soc. N.S.W. v., 91.*

Stroma quite black, punctulate; perithecia immersed, impressed at the apex; asci clavate, slightly attenuated at the base,  $86 \mu$  long; sporidia allantoid, guttulate, rather large,  $22 \mu$  long.

On epicarp of *Cucurbita lagenaria*. Queensland.

**1616. Eutypa ludibunda.** *Sacc. Syll. 632.*

Stroma broadly effused, formed from the unchanged or blackened bark or wood; perithecia globose, black externally, at first mealy with white, produced into a short, conical or obtuse,  $4-5$ , sulcate

ostiolum; asci clavate; sporidia allantoid, rounded at the ends, curved, yellowish ( $9-14 \times 2-3 \mu$ , or in Australian specimens,  $15 \times 4 \mu$ ).

On branches. Victoria.

*Family VIII. CUCURBITARIÆ.*

Perithecia cæspitose or gregarious, erumpent, and then sub-superficial.

GENUS 30. **GIBBERIDEA.** *Fckl.*

Perithecia cæspitose, papillate, becoming smooth.

\* **ZIGNOELLA.** *Sporidia multiseptate, hyaline.*

**1617. Gibberidea (Zignoella) Archeri.** *B. Sacc. Syll.*

3637. = *Cucurbitaria Archeri.* *Berk. Fl. Tasm.* II., 280.

Crowded; perithecia rugose, at length collapsing, and cup-shaped; asci clavate, shortly stipitate,  $72-75 \times 8-11 \mu$ ; sporidia elongated, obtuse at the ends, curved, four-nucleate, then triseptate,  $21-27 \times 5-6 \mu$ ; hyaline.

On rotten wood. Tasmania. (Fig. 217.)

GENUS 31. **CUCURBITARIA.** *Gray.*

Perithecia cæspitose, erumpent, carbonaceous, typically rugulose.

\* **MELANOMMA.** *Sporidia 3 septate, brown.*

**1618. Cucurbitaria (Melanomma) plagia.** *Cke. & Mass.*

*Grev.* XVII., 8.

Perithecia densely crowded, forming oblong erumpent clusters which are at length almost superficial, and confluent in large patches, 2-3 in. long; the individual perithecia are globose, but compressed and deformed by crowding, black, shining, smooth. Ostiolum minute; asci cylindrical; sporidia in one or two series, lanceolate, triseptate, pale-brown ( $40-45 \times 10-12 \mu$ ).

On living twigs of *Cassinia aculeata*. Victoria. (Fig. 218.)

*Family IX. SUPERFICIALES.* *Fr.*

Perithecia distinct from each other, superficial, or nearly superficial.

GENUS 32. **BYSSOSPHERIA.** *Cooke.*

Perithecia smooth, emerging from a more or less distinct byssoid subiculum.

\* **EU-ROSELLINIA.** *Sporidia continuous, brown.*

**1619. Byssosphæria aquila.** *Fries S. M.* II., 442. = *Sphæria byssiseda.* *Tode. Meck.* II., 10. *Rosellinia aquila.* *Sacc. Syll.* 916.

Perithecia gregarious or densely crowded, globose, firm (1 m.m. diam.), sometimes obscurely concentrically sulcate, often depressed at the apex, papillate, dark brown, emerging from a persistent brown tomentose subiculum; asci elongate, stipitate,  $120 \times 10 \mu$ ; sporidia cymbiform, unequal-sided,  $16-22 \times 6-7 \mu$ ; sooty brown, with or without a small hyaline appendage at the end.

On wood and bark. Tasmania. (Fig. 219.)

\*\* SCORTECHINIA. *Sporidia continuous, hyaline.*

**1620. Byssosphaeria (Schortechinia) acanthostroma.** *Mont, Sacc. Syll. 1754.*

Byssisedous; perithecia very small, globose, gregariously crowded, even, black, not papillate, soon depressed in the centre, pierced at the apex, girt by the subiculum of the same colour, fibres of the subiculum septate, divided into short aculeate branches; sporidia ovoid-cymbiform, small,  $5-6\frac{1}{2} \mu$  long, biguttulate.

On wood and bark. Queensland.

*Sub-Family 1. Villosæ. Fries.*

Perithecia villose, tomentose, or setose.

GENUS 33. **LASIOSPHERIA.** *Cooke.*

Perithecia superficial, setose; sporidia hyaline, or sub-hyaline.

\* LEPTOSPORA. *Sporidia continuous, sub-hyaline.*

**1621. Lasiosphaeria ovina.** *Pers. Syn. 71. Sacc. Syll 3568.*

Perithecia gregarious or superficial, subsphaeroid, covered with a clammy white villosity, naked at the base, ostiola papillate, blackish ( $\frac{1}{2}$  m.m. broad); asci fusoid-clavate,  $135-150 \times 12-16 \mu$ ; sporidia cylindrical, vermicular, simple, multiguttulate, hyaline or pale yellow,  $48-54 \times 5-6 \mu$ .

On rotten wood. Victoria.

\*\* ENCHNOSPHERIA. *Sporidia multiseptate.*

**1622. Lasiosphaeria larvæspora.** *Cke. & Mass. Grev. xix., 83.*

Perithecia superficial, loosely gregarious ( $\frac{1}{2}-\frac{3}{4}$  m.m. diam.), globose, covered with a mealy, floccose, lemon-coloured investment, with a naked, pierced ostiolum; asci cylindrically clavate, octosporous; sporidia elongated-fusiform, straight or flexuous ( $160 \times 10 \mu$ ), at first nucleate, then multiseptate (15-19), hyaline.

On bark. Victoria. (Fig. 220.)

GENUS 34. **CONIOCHÆTA.** *Sacc.*

Perithecia hispid, subsuperficial. Sporidia coloured.

\* PLEOSPHERIA. *Sporidia muriform, coloured.*

**1623. Coniochæta (Pleosphaeria) pulvinula.** *Berk. = Lasiosphaeria pulvinula. Berk. Hook. Journ. 1845, 299. Sacc. Syll. 3927.*

Scattered, subglobose, at length collapsed and depressed, rather hairy, black; ostiolum obsolete. Sporidia irregularly ellipsoid, many septate, muriform.

On rotten wood. W. Australia. (Fig. 221.)

GENUS 35. **VENTURIA.** *Not.*

Perithecia setulose, membranaceous, usually growing on leaves. Sporidia oblong, hyaline.

\* *Sporidia uniseptate.*

- 1624. *Venturia circinans.*** *Fries S. M.* III., 252. *Sacc. Syll.* 2311. = *V. glomerata.* *Cke. Grev.* 69.

Perithecia aggregated in patches or spots, scarcely circinating, cuspidate hairs, thickened at the base ( $30\ \mu$  long), scattered about the ostiolum. Asci cylindrical,  $40-50 \times 9-11\ \mu$ , sessile; sporidia bicellular,  $9-10 \times 6\ \mu$ , lower cell smallest, hyaline.

On leaves of *Geranium.* *Victoria.* (Fig. 222.)

GENUS 36. **CHÆTOMIUM.** *Kunze.*

Perithecia submembranaceous, brittle, hairy. Asci soon dissolved. Sporidia continuous, brown.

- 1625. *Chætomium elatum.*** *Kze. Myk. Hfte.* I., 15, t. 1, f. 3. = *C. comatum.* *Sacc. Syll.* 793.

Perithecia gregarious, subovoid, very thin, black, hairs radiating from the base, above and chiefly about the vertex, very long, erect, branched, intricate, dark bay, rough on the surface. Asci sessile, or nearly so, oblong, obtuse at the ends,  $40-48 \times 16\ \mu$ . Sporidia elliptically sphaeroid, apiculate at the ends, brown,  $10-12 \times 8-9\ \mu$ , slightly compressed.

On rotting grass, etc. *Victoria.*

- 1626. *Chætomium cymatotrichum.*** *Cooke Grev.* XII., p. 21. *Sacc. Syll.* 6301.

Gregarious, perithecia depressedly globose ( $200\ \mu$  diam.), woolly everywhere, sooty olive, ostiolum black; hairs thin, simple, smooth, interwoven, very numerous, gyrosely flexuous, brown. Asci pear-shaped; sporidia globose or ovate, slightly apiculate at the ends, or obtusely rounded,  $10 \times 8\ \mu$ .

On leaves of *Solanum.* *Queensland.* (Fig. 223.)

Sub-Family 2. **ROSELLINIÆ.**

Perithecia subsuperficial, smooth, naked, usually carbonaceous.

GENUS 37. **ROSELLINIA.** *Not.*

Perithecia superficial, smooth. Sporidia continuous, brown.

- 1627. *Rosellinia inspersa.*** *Berk. Hook. Journ.* 1845, 299. *Sacc. Syll.* 970.

Crowded or scattered, black, perithecia subglobose, rugulose, rather rigid; ostiolum obsolete. Asci linear; sporidia elliptic, brown.

On rotten wood. *W. Australia.*

- 1628. *Rosellinia tremellicola.*** *Cke. & Mass. Grev.* XVIII., 6.

Perithecia scattered, globose, superficial, black, papillate, smooth. Asci cylindrical, 8-spored; sporidia uniseriate, elliptic, continuous, brown,  $7-8 \times 4\ \mu$ .

On *Tremella fuciformis.* *Queensland.* (Fig. 224.)

GENUS 38. **MELANOMMA.**

Perithecia subsuperficial, smooth. Sporidia septate, brown.

**1629. *Melanomma congesta.*** *Cooke Grev. Austr. Fungi No. 57.* = *Trematosphæria congesta. Sacc. Syll. 7010.*

Gregarious, crowded, black; perithecia subcylindrical, convex, smooth, pierced with a pore. Asci subclavate; sporidia fusiform, triseptate, slightly constricted, sooty brown,  $40 \times 10 \mu$ .

On bark. Twofold Bay.

Family X. **PERTUSÆ.**

Perithecia emergent, smooth, flattened at the base, adnate or somewhat immersed, ostiola papillate or pierced.

GENUS 39. **CONISPHERIA.** *Cooke.*

Perithecia carbonaceous, rather conical, flattened at the base; sporidia hyaline, continuous, or septate.

\* *ZIGNOINA.* *Sporidia continuous, hyaline.*

**1630. *Conisphæria subcorticalis.*** *Cke. Grev. xiv., 12. Sacc. Syll. 7063.*

Scattered. Perithecia semi-immersed, pierced, black, opaque. Asci cylindrical; sporidia elliptic, hyaline, continuous,  $12 \times 4 \mu$ .

Inside dead bark of trees. (Fig. 227.)

\*\* *ZIGNARIA.* *Sporidia uniseptate, hyaline.*

**1631. *Conisphæria erumpens.*** *Cke. Grev. xx., 36.*

Scattered or aggregate, erumpent, and then nearly superficial, or semi-immersed. Perithecia globose, smooth, black ( $\frac{1}{2}$  m.m. diam.), slightly papillate. Asci cylindrically clavate, octosporous; sporidia fusoid-elliptic, uniseptate, slightly constricted, binucleate, hyaline ( $15-16 \times 4-5 \mu$ ).

On twigs. Victoria.

\*\*\* *ZIGNOËLLA.* *Sporidia multiseptate, hyaline.*

**1632. *Conisphæria australica.*** *Cke. & Mass. Grev. xviii.*

Perithecia scattered, semi-immersed, rather conical, with the base buried in the wood, pierced at the apex, black ( $\frac{1}{2}$  m.m. diam.). Asci cylindrical, substipitate; sporidia narrowly fusiform, 5-7 septate, not constricted at the septa ( $40 \times 4 \mu$ ).

On decorticated branches. Victoria.

Family XI. **LOPHIOSTOMACEÆ.**

Perithecia subsuperficial, ostiolum compressed, opening with a more or less broad crack.

GENUS 40. **LOPHIOSTOMA.**

Perithecia carbonaceous. Sporidia simple or septate, coloured.

\* *SCHIZOSTOMA.* *Sporidia bilocular, typically coloured.*

**1633. *Lophiostoma Schomburgkii.*** *Berk. Linn. Journ. xviii., 389.* (*Schizostoma*) *Sacc. Syll. 5405.*

Perithecia large, free, black, ostiolum linear; sporidia elongated, fusoid biconical, 30-34  $\mu$  long, uniseptate, hyaline.

On wood. Queensland.

*Family XII. CERATOSTOMEÆ.*

Perithecia for the most part immersed, or sometimes subsuperficial, rostrate.

GENUS 41. **CERATOSTOMELLA.** *Sacc.*

Perithecia rather carbonaceous. Sporidia hyaline.

\* RHAMPHORIA. *Sporidia muriform.*

**1634. Ceratostomella (Rhamphoria) tenella.** *Sacc.*  
*Hedwigia* 1890, 155.

Perithecia subsuperficial, or with the base buried in the wood, small, globose ( $\frac{1}{8}$ – $\frac{1}{4}$  m.m. diam.), black, thinly carbonaceous, produced into a rather obtuse cylindrical beak ( $\frac{1}{8}$  m.m. long). Asci tapering, clavate, shortly stipitate, truncate at the apex ( $100$ – $120 \times 9$ – $12 \mu$ ); sporidia oblong-fusoid, rather acute at each end, often unequal-sided, 9–11 septate and muriform ( $24$ – $26 \times 6\frac{1}{2}$ – $7\frac{1}{2} \mu$ ), scarcely constricted at the septa, hyaline; paraphyses filiform.

On rotten wood of *Eucalyptus*. *Mariatta.*

*Family XIII. OBTECTÆ. Fries.*

Perithecia innate in the bark, and covered by the cuticle.

GENUS 42. **MASSARIA.** *Fries.*

Corticulous. Perithecia innate; sporidia usually oozing out at the ostiolum, and blackening the matrix, involved in a hyaline mucus.

\* MASSARIELLA. *Sporidia uniseptate, brown.*

**1635. Massaria australis.** *Cooke Grev. XIII., 65. Sacc.*  
*Syll.* 2707.

Scattered, covered, inconspicuous, perithecia depressed; asci clavate; sporidia lanceolate, uniseptate, constricted at the septum, brown,  $45$ – $50 \times 12$ – $14 \mu$ . Stylospores clavate, 3–5 septate, brown,  $50 \times 14 \mu$ .

On bark. Victoria. (Fig. 228.)

GENUS 43. **ENDOPHLEÆ.** *Fries.*

Corticulous, scattered, covered. Sporidia one or many septate, hyaline.

\* DIDYMELLA. *Sporidia uniseptate.*

**1636. Endophleæ (Didymella) cladophila.** *Niessl. Sacc.*  
*Syll.* 2126.

Perithecia loosely gregarious, covered with the bleached cuticle, of medium size, hemispherical, at length depressed above, papillate, black, coriaceous; asci clavate-cylindrical; sporidia uniseriate, or nearly so, ovoid-lanceolate, usually straight, uniseptate, constricted, hyaline ( $10$ – $13 \times 4$ – $5 \mu$ ).

On branches.

GENUS 44. **DIDYMOSPHERIA**. Sacc.

Corticulous, innate; sporidia uniseptate coloured.

**1637. Didymosphaeria conoidella**. Sacc. & Berl. Sacc. Syll. 6573.

Perithecia loosely gregarious, naked by the falling away of the epidermis, globose, then conical, black, often concentric, obsoletely plicate ( $\frac{1}{3}$ – $\frac{1}{2}$  m.m.), ostiolum rather acute; asci clavate ( $80$ – $90 \times 12 \mu$ ); sporidia ellipsoid-oblong, uniseptate, constricted ( $15$ – $18 \times 6$ – $7 \mu$ ), dingy brown.

On branches of *Capparis*. Queensland.

**1638. Didymosphaeria Banksiae**. Cke. Grev. xix., 91.

Epiphyllous, spots orbicular, pallid, with a nebulous brown margin; perithecia few, central, erumpent by cracking the cuticle, black, subglobose, papillate; asci clavate, sessile, octosporous; sporidia biseriate, uniseptate, the upper cell nearly globose, the lower cell rather narrower, brown,  $10 \times 5 \mu$ .

On living leaves of *Banksia*. Victoria. (Fig. 231.)

Family XIV. **CAULICOLÆ**. Fries.

Immersed, innate, for the most part observed on the dead stems of herbaceous plants.

GENUS 45. **PHOMATOSPORA**. Sacc.

Perithecia covered or erumpent, sporidia continuous, hyaline.

\* **PHYSALOSPORA**. Having paraphyses.**1639. Physalospora gregaria**. Sacc. Syll. 1660.

Perithecia densely gregarious, covered by the epidermis, globose, very shortly papillate, black, white within; asci clavate, rounded, membrane thick, shortly stipitate; sporidia ovoid-oblong ( $30$ – $40 \times 6$ – $8 \mu$ ), granulose or guttulate, hyaline.

On stems of *Ricinus communis*. Queensland.

GENUS 46. **DIDYMELLA**. Sacc.

Sporidia uniseptate, hyaline.

**1640. Didymella bryoniae**. Eckl. Sacc. Syll. 2174.

Perithecia nestling beneath the epidermis, at length almost free, gregarious, very minute ( $260$ – $280 \mu$  diam.), globose, depressed, papillate, black. Asci oblong, attenuated at the base ( $62 \times 12 \mu$ ); sporidia oblong, subclavate, unequally two-celled, upper cell largest, lower cell obconical, obtuse, hyaline ( $14$ – $16 \times 5 \mu$ ).

On twigs of Cucurbitaceous plant. Queensland. (Fig. 231.)

GENUS 47. **ANTHOSTOMELLA**. Sacc.

Sporidia continuous, coloured.

**1641. Anthostomella lepidospermæ**. Cooke Grev. xx., 5.

Perithecia seated on bleached elongated spots which have a dark brown border, globose, at first covered, then splitting the cuticle. Asci shortly stipitate. Sporidia elongated-elliptical, biseriate, rounded at the ends, continuous, clear brown ( $14 \times 4 \mu$ ).

On *Lepidosperma*. Victoria. (Fig. 226.)

GENUS 48. **PLEOSPORA.** *Rabh.*

Perithecia scattered, erumpent. Sporidia multiseptate, muriform, coloured.

**1642. Pleospora herbarum.** *Pers. Sacc. Syll.* 3730.

Perithecia somewhat gregarious, at first covered by epidermis, then nearly naked, sphaeroid, depressed, collapsed when dry. Ostiolum papillate, or the vertex obtusely umbonate, smooth, sometimes fibrillose at the base, black (200-450  $\mu$  broad). Asci clavate (100-160  $\times$  20-30  $\mu$ ); sporidia ellipsoid or oblong, 7-septate, muriform, yellow or brown, 30-40  $\times$  16-18  $\mu$ .

On herb stems. Victoria. N. Zealand. (Fig. 229.)

**1643. Pleospora aucubæ.** *West. Sacc. Syll.* 3776.

Perithecia spherical, immersed, black, scattered upon somewhat circular brown spots, with the centre paler and the circumference margined by a thicker line. Ostiolum papillate, perforating the cuticle. Asci cylindrical; sporidia ellipsoid, muriform, sooty-brown.

On leaves of *Aucuba*. Victoria.

*Family XV. FOLIICOLÆ. Fries.*

Perithecia minute, membranaceous, or submembranaceous, innate, covered, growing for the most part on leaves.

GENUS 49. **LÆSTADIA.** *Auers.*

Sporidia continuous, hyaline.

\* GENUINA. *Without paraphyses.***1644. Læstadia destructiva.** *B. & Br. Sacc. Syll.* 6379. =  
*Sphærella destructiva. B. & Br. Proc. Linn. Soc. N.S.W.v.,*  
*91. Trans. Linn. Soc. 1883, t. 15, f. 22-24.*

Perithecia minute, seated on brown spots. Asci short (75  $\mu$  long); sporidia subelliptic, rather attenuated at the base, 12  $\mu$  long, hyaline.

On leaves. Queensland. (Fig. 233.)

\*\* PHYSALOSPORA. *With paraphyses.***1645. Læstadia (Physalospora) phyllodiæ.** *Cke. & Mass. Grev. xvi., 114. = P. microsticta. Cke. Grev. xx., 5.*

Perithecia scattered, very thin, punctiform, immersed, black, covered by the blackened cuticle. Asci clavate, stipitate; sporidia elliptic, granular within, continuous, hyaline, 20  $\times$  8  $\mu$ .

On phyllodes of *Acacia suarcorens*. Victoria. (Fig. 230.)

GENUS 50. **SPHÆRELLA.** *DeNot.*

Sporidia uniseptate, hyaline.

**1646. Sphærella nubilosa.** *Cke. Grev. xix., 61.*

Hypophyllous. Spots orbicular, or confluent and irregular, glaucous brown, soon falling away. Perithecia numerous, very minute (40-60  $\mu$  diam.), scarcely visible to the naked eye, depressedly globose, membranaceous, brown, pierced at the apex.



Asci clavate, 8-spored; sporidia fusiform, 2-4 nucleate, then uniseptate, hyaline,  $16 \times 3 \mu$ .

On living leaves of *Eucalyptus*. Victoria.

**1647. *Sphaerella cryptica*. Cooke Grev. xx., 5.**

On both surfaces of the leaves. Spots reddish-brown, large, irregular or confluent. Perithecia subglobose, immersed in the substance of the leaf, with scarcely any indication of their presence. Asci obpyriform or obclavate, sessile; sporidia lanceolate, uniseptate, not constricted, hyaline,  $10 \times 3 \mu$ .

On fading leaves of *Eucalyptus*. Victoria. (Fig. 234.)

**1648. *Sphaerella rubiginosa*. Cke. Grev. xiv., 91.**

Epiphyllous. Perithecia scattered, minute, punctiform, rather prominent, black. Asci clavate, sessile. Sporidia elliptic, obtuse, slightly constricted in the middle, uniseptate, hyaline, yellowish,  $10 \times 5 \mu$ .

On dead leaves of *Pittosporum rubiginosum*. Queensland.

**1649. *Sphaerella euonymi*. Kze. Auers. Myc. Eur. 10, fig. 40. Sacc. Syll. 1906.**

Perithecia on the under surface, black, innate beneath the epidermis, densely scattered or gregarious, on greyish spots, more or less limited by the venation, globose, pierced. Asci clavate, very shortly stipitate; sporidia biseriate, fusiform, rather falcate, obtuse, 4-nucleate, then uniseptate, hyaline ( $14 \times 2 \mu$ ).

On dead leaves of *Euonymus*. Victoria.

**1650. *Sphaerella Banksiae*. Cke. & Mass. Grev. xvi., 114.**

On the upper surface. Spots none, perithecia gregarious, rather innate, black, pierced with a pore. Asci clavate; sporidia elliptic, uniseptate, hyaline,  $12 \times 5 \mu$ .

On fading leaves of *Banksia integrifolia*. Victoria.

**1651. *Sphaerella alyxiae*. Cke. & Mass. Grev. xvi., 5.**

On both surfaces. Perithecia gregarious, innate, subglobose, covered by the blackened cuticle, at length collapsed. Asci clavately cylindrical; sporidia lanceolate, uniseptate, hyaline,  $25 \times 7 \mu$ .

On dead leaves of *Alyxia buxifolia*. Victoria.

**1652. *Sphaerella smilacicola*. Schwz. Cooke Grev. Sacc. Syll. 2028.**

Spots sinuous or subquadrate, impressed, rufous-brown, with a black margin; perithecia punctiform, innate, rather conical, black, scattered ( $90 \mu$  diam.), pierced with a pore. Asci clavate, shortly stipitate ( $40-50 \times 10 \mu$ ); sporidia oblong, tapering, rounded at both ends, curved, uniseptate, not constricted, hyaline ( $14-15 \times 3 \mu$ ).

On leaves of *Dioscorea* and *Smilax*. Queensland.

**1653. *Sphærella graminicola*.** *Fckl. Sym. Myc.* 101. *Sacc. Syll.* 2048.

Perithecia on the upper surface, aggregate, innate, rather prominent, small, black, occupying the whole surface, ostiola papillate. Asci oblong, or ovate oblong; sporidia oblong, obtuse, uniseptate, hyaline.

On leaves of grass. Victoria.

GENUS 51. **SPHÆRULINA.** *Sacc.*

Sporidia three or multiseptate.

\* *LEPTOSPHÆRELLA.* *Sporidia multiseptate.*

**1654. *Sphærulina (Leptosphærella) camelliæ*.** *Cke. & Mass. Grev.* XVI., p. 5.

Spots on the upper surface, becoming brownish, vague, indeterminate; perithecia scattered, punctiform, scarcely papillate, pierced with a pore. Asci subclavate, sometimes with 4 sporidia, shortly stipitate. Sporidia fusoid, curved, triseptate, scarcely constricted, greenish,  $25-27 \times 5-6 \mu$ .

On living leaves of *Camellia*. Victoria. (Fig. 235.)

The following names from Bailey's "Queensland Plants" appear to have no corresponding descriptions, or specimens, and must, therefore, be excluded.—

*Sphæria litsiæ.* *B. & Br.*

*Sphæria macrozamiæ.* *B. & Br.*

*Sphæria sacchari.* *B. & Br.*

*Sphærella dammaræ.* *B. & Br.*

Family XVI. **MICROTHYRIACEÆ.**

Perithecia subsuperficial, membranaceous or carbonaceous, dimidiate, flattened, radiating in structure, pierced in the centre, or without a mouth.

GENUS 52. **MICROTHYRIUM.** *Not.*

Perithecia membranaceous.

\* *Sporidia uniseptate, hyaline.*

**1655. *Microthyrium amygdalinum*.** *Cke. & Mass. Grev.* XIX., 91.

Perithecia gregarious or scattered, on both surfaces, superficial, and soon falling away, lenticular, membranaceous, very dark brown, with a radiating cellular structure, pierced in the centre. Asci clavate; sporidia without order, elliptical, attenuated towards each end, uniseptate, hyaline,  $14 \times 7 \mu$ .

On living leaves of *Eucalyptus amygdalina*. Spencer's Gulf. (Fig. 237.)

GENUS 53. **MICROPELTIS.** *Mont.*

Perithecia sub-convex, pierced.

\* *Sporidia 3 or many septate, hyaline.*

**1656. Micropeltis applanata.** *Mont. Cub. 325, t. 12, f. 6.*  
*Sacc. Syll. 5390.*

Perithecia dimidiate, scutate, orbicular, pierced with a pore in the centre, circumference flat. Asci clavate, or cylindrical and ventricose; sporidia 6-8, fusiform, 5-septate, constricted, sometimes curved (20-25  $\mu$  long).

On *Eucalyptus tereticornis*. Queensland. (Fig. 236.)

*Family XVII. PERISPORIACEÆ.*

Simple. Perithecia membranaceous, coriaceous, or subcarbonaceous, wholly closed, hence without mouth, and irregularly split.

GENUS 54. **ERYSIPHE.** *Hedw.*

Perithecia superficial, spheroid or hemispherical, closed, at first yellowish, then brown, at length black, minute, waxy membranaceous; mycelium arachnoid, interwoven; appendages simple or vaguely branched, never dichotomous, interwoven with the mycelium. Asci ovoid or nearly so, without paraphyses. Sporidia ovoid, hyaline.

**1657. Erysiphe vitigera.** *Cke. & Mass. Grev. xv., 98.*

On both surfaces, mycelium floccose, persistent, perithecia gregarious, very minute (4 m.m. diam.), spheroid; appendages obsolete or interwoven with the mycelium. Asci pyriform (4 in a perithecium), 50  $\times$  30, bisporous; sporidia elliptic, hyaline, 18  $\times$  9  $\mu$ .

On vine leaves. Victoria. (Fig. 238.)

GENUS 55. **SPHÆROTHECA.** *Lev.*

Perithecia with one ascus, girt by floccose appendages, interwoven with the mycelium. Ascus octosporous. Sporidia ovoid, continuous, hyaline.

**1658. Sphærotheca pannosa.** *Lev. Ann. Sci. Nat. 1851, p. 138. Sacc. Syll. I., 6.*

Mycelium woolly, then cloth-like, persistent, perithecia minute, globose, scattered; appendages floccose, hyaline, shorter than the perithecia. Asci globose; sporidia ovoid.

On rose leaves. Queensland. (Fig. 239.)

GENUS 56. **EUROTIIUM.** *Link.*

Perithecia superficial, globose, without mouth, membranaceous, smooth, sulphur yellow, or brick-red or brownish, arising from a conidia-bearing mycelium. Asci spheroid; sporidia subglobose, continuous, hyaline.

**1659. Eurotium herbariorum.** *Link. Sp. Sacc. Syll. 101.*

Perithecia seated on creeping, branched, interwoven, at first white filaments, spheroid, sulphur-coloured, 75-90  $\mu$  diam.; asci

sphaeroid or subsphaeroid, 12-15  $\mu$ ; sporidia 8, crowded, hyaline, lens-shaped, 8-10  $\mu$ ; margin radiately striolate, 5  $\mu$  diam.

On plants in herbaria, etc. Queensland. N. Zealand. (Fig. 240.)

**1660. Eurotium lateritium.** *Mont. Syll.* 918. *Sacc. Syll.* 104.

Perithecia membranaceous, cellulose (100-120  $\mu$ ), yellow, then ochre, immersed in dense, interwoven, woolly, orange-yellow flocci. Asci 8-spored, globose, or elliptic, 16  $\times$  12  $\mu$ , evanescent; sporidia sphaeroid, angular by compression, yellow, 7  $\times$  5  $\mu$ , epispore thick.

On leaves. Mount Bartle Frere. S.W. Australia.

GENUS 57. **ASTERINA.** *Lev.*

Perithecia seated on a spot-like, radiating, black, somewhat superficial mycelium, lenticular or depressedly globose, without mouth, membranaceous. Asci short, for the most part 8-spored; sporidia typically two-celled, brown, but sometimes continuous or multi-septate, and either hyaline or coloured.

\* *Sporidia uniseptate, brown.*

**1661. Asterina Baileyi.** *B. & Br. Proc. Linn. Soc. N.S.W.* v., 89. *Linn. Trans.* 1883, t. 15, f. 25-28. *Sacc. Syll.* 6196.

Threads of mycelium brown, nodulose, branching, forming reddish-brown patches on leaves; perithecia minute, rugose, brown, with a few adherent fibrils. Asci clavate, octosporous; sporidia brown, uniseptate, constricted.

On *Hakea*. Queensland.

**1662. Asterina correicola.** *Cke. & Mass. Grev.* xvi., 5.

Forming orbicular black spots on leaves. Perithecia convex, flattened (60  $\mu$  diam.), black, crowded on the spots, margin fimbriate. Asci nearly globose, 8-spored; sporidia elliptic, uniseptate, scarcely constricted, rounded at the ends, brown, 25-28  $\times$  10-12  $\mu$ .

On living leaves of *Correa Laurenciana*. Victoria. (Fig. 241.)

**1663. Asterina pelliculosa.** *Berk. Antarc. Crypt.* p. 137. *Sacc. Syll.* 200.

Mycelium forming a pellicle, spot-like, black. Perithecia globose, depressed, black. Asci ovate; sporidia oblong-ellipsoid, 16-20  $\mu$  long, uniseptate, brown.

On leaves. Queensland.

**1664. Asterina platystoma.** *Cke. & Mass. Grev.* xxiii., 6.

Mycelium thin, more or less orbicular, dendritic, black; perithecia convex, flattened, closely adnate, black, broadly fissured at the apex. Asci saccate, 8-spored. Sporidia elliptic, uniseptate, constricted in the middle, brown, upper cell broadest, 17-18  $\times$  9  $\mu$ .

On living leaves of *Castanospermum*. Queensland.

- 1665. *Asterina microthyrioides*.** *Winter Hedw.* 1885.  
*Sacc. Syll.* 6193.

Subiculum absent. Perithecia scattered, or loosely gregarious, rarely a few aggregated or confluent, depressedly orbicular, very minute, black, rugulose, opaque, rather papillate in the centre, membranaceous, margin radiately fimbriate, brown, 300  $\mu$  broad. Asci ovate or elliptical, clavate, 40-50  $\times$  18-21  $\mu$ . Sporidia lanceolate, narrowly rounded at the ends, uniseptate, hyaline, then brownish, 19  $\times$  5  $\mu$ .

On leaves of *Eucalyptus pilularis*. Victoria.

\*\* *ASTERELLA*. *Sporidia uniseptate, hyaline.*

- 1666. *Asterina (Asterella) alsophila*.** *Cke. & Mass. Grev.*  
 xviii., 81.

Perithecia membranaceous, discoid, suborbicular, mostly confluent in oblong or irregular patches, pitchy black, cellules radiating, mostly dentate at the margin; asci pear-shaped, or shortly clavate, 8-spored; sporidia elliptical, uniseptate, unequal, the lower cell double the length of the upper, and a little attenuated, 9-10  $\times$  4-5  $\mu$ , hyaline.

On *Alsophila rebecca*. Queensland.

- 1667. *Asterina (Asterella) subcuticulosa*.** *Cke. Grev.*  
 xvi., 81.

On the surface of leaves. Perithecia thin, flattened, irregular or confluent, without mycelium, black, or brown under a lens; asci pear-shaped; sporidia elliptic clavate, uniseptate, hyaline, upper cell broadest (10-12  $\times$  4  $\mu$ ).

On fading and dead leaves of *Olearia argophylla*. N.S. Wales. Victoria.

- 1668. *Asterina reptans*.** *Berk. & Curt. Cuba.* 734. *Sacc. Syll.* 198.

Mycelium thin, rather reticulated; perithecia minute, constructed from the radiating cells; asci clavate, sporidia oblong, somewhat fusiform, uniseptate.

On leaves. Queensland.

\*\*\* *ASTERIDIUM*. *Sporidia multiseptate.*

- 1669. *Asterina (Asteridium) eucalypti*.** *Cke. & Mass. (not Pass.) Grev.* xvi., 74.

Very densely gregarious. Perithecia minute, discoid, flattened, black; asci 4 spored, pyriform; sporidia elongated, ellipsoid, triseptate, constricted, brown, one joint thickened, 28  $\times$  10  $\mu$ .

On dead leaves of *Eucalyptus amygdalina*. Victoria.

GENUS 58. **DIMEROSPORIUM.** *Fckl.*

Perithecia superficial, globose, without mouth, between membranaceous and carbonaceous, seated on a copious black, rather crustaceous, conidia-bearing mycelium; asci short, 8-spored; sporidia two-celled, hyaline or brown.

**1670. *Dimerosporium Ludwigianum*. Sacc. Hedw. 1889, p. 127.**

Mycelium forming pale sooty spots on both surfaces, scarcely determinate, adpressed; perithecia here and there crowded, globular, superficial ( $75\ \mu$  diam.), dark sooty brown; threads radiating, of the same colour, septate, unequal, loosely interwoven, adpressed; asci rather thick, clavately-fusoid, obtuse at the apex,  $25\text{--}28 \times 9\text{--}10\ \mu$ ; sporidia shortly fusoid, uniseptate, not constricted,  $10\text{--}12 \times 3\ \mu$ , hyaline.

On fading leaves of *Lagenophora Billardieri*. Victoria.

**1671. *Dimerosporium parvulum*. Cooke Grev. xx., 5.**

Perithecia minute, subglobose, membranaceous, with a brown, sparse, radiating mycelium, seated on irregular black spots (in company with *Asteromella*); asci globose, with a small basal apiculus; sporidia elliptical, uniseptate, constricted at the septum, hyaline,  $11\text{--}20 \times 8\ \mu$  (possibly acquiring colour when mature).

On living leaves of *Trema aspera*. Queensland. (Fig. 243.)

GENUS 59. **MELIOLA. Fries.**

Perithecia seated on a spot-like, superficial, black mycelium, globose, without mouth, membranaceous, surrounded by setae or appendages; asci often short, thick, 2-8-spored; sporidia typically oblong, 2-5 septate, brown, sometimes continuous or fenestrate, hyaline or brown.

**1672. *Meliola corallina*. Mont. Syll. 910. Sacc. Syll. 279.**

On both surfaces. Mycelium spot-like, quite black, spots orbicular; perithecia large, globose, scarcely depressed, rarely collapsed and umbilicate, surrounded by rigid, shining, black appendages; sporidia triseptate, oblong.

On leaves. Queensland.

**1673. *Meliola amphitricha*. Fr. Elen. II., 109. Sacc. Syll. 287.**

Mycelium spot-like, radiating from the centre, continuous, black, branches not articulated; perithecia globose, depressed, rugulose, at length collapsing, surrounded by black, opaque, rigid, erect, septate appendages; asci 2-spored; sporidia 4-septate, oblong, brown,  $45\text{--}50 \times 12\ \mu$ .

On leaves of *Cupania*, *Eucalyptus*, and *Flindersia*. Victoria. Queensland.

**1674. *Meliola musæ*. Mont. Syll. 905. Sacc. Syll. 291.**

Tufts spot-like, large, black; perithecia very minute and inconspicuous, appendages erect, simple, curved at the apex; sporidia large, oblong, brown, five-celled.

On *Musæ*. Queensland.

**1675. *Meliola orbicularis*. B. & C. *Cuban Fungi* 880. *Sacc. Syll.* 294.**

Spots rather thick, orbicular; perithecia globose, appendages flexuous, curved,  $50\ \mu$  long, thick, obtuse; sporidia 4-septate,  $50 \times 14\ \mu$ .

On branches and leaves. Queensland.

**1676. *Meliola densa*. Cooke *Grev.* XII., 85.**

On either surface of leaves, forming orbicular, very black, velvety spots (1 c.m. broad), then confluent; perithecia globose, black, slightly warted ( $180\ \mu$  diam.), surrounded by crowded, erect appendages, the apices of which are curved; asci broadly clavate, bisporous; sporidia elliptic, 4-septate, constricted, brown,  $45 \times 18\ \mu$ .

On *Eucalyptus* leaves. Queensland. (Fig. 244.)

**1677. *Meliola loganiensis*. *Sacc. & Berl. Sacc. Syll.* 6244.**

Epiphyllous; mycelium broadly effused, but thin; hyphæ creeping, filiform, branched, septate, somewhat hyaline, perithecia globose, obtuse,  $130\text{--}140\ \mu$  diam., black, sparingly beset with straight, divergent, cuspidate, septate, sooty-brown bristles; asci fusoid-clavate,  $45\text{--}50 \times 18\ \mu$  (sub-octosporous); sporidia fusoid, clavulate,  $28\text{--}32 \times 7\text{--}8\ \mu$ , more acute downwards, 7-8 septate, not constricted, hyaline.

On leaves of *Smilax*. Queensland.

**1678. *Meliola octospora*. Cooke *Grev.* XI., 38.**

Spots orbicular, minute, velvety, perithecia of medium size, appendages erect, two or three times dichotomous; asci saccate, mostly with 8 spores; sporidia 3-septate, constricted much,  $45 \times 18\ \mu$ , brown.

On leaves. Queensland.

**1679. *Meliola mollis*. B. & Br. *Ceylon Fungi* 1178. = *Dimerosporium molle*. B. & Br. *Sacc. Syll.* 237.**

Mycelium of soft, interwoven, black threads resembling *Racodium*; perithecia globose, rugulose, appendages erect, 3 times dichotomous at the apex, brown; asci linear; sporidia elliptical, uniseptate,  $20 \times 10\ \mu$ .

On leaves. Queensland.

**1680. *Meliola tetracera*. Thum. *Symb. Myc. Aust.* II., No. 92. *Sacc. Syll.* 310.**

On both surfaces, spots more or less orbicular, or rather stellate or dendritic, black, evanescent; flocci simple or rarely somewhat branched, unequal, flexuous, short, brown; perithecia carbonaceous, globose, grumous; asci cylindrically fusiform, acute at each end,  $36 \times 12\ \mu$ ; sporidia ovoid or elliptic, 8, rounded at the ends, pale brown,  $7 \times 5\ \mu$ , simple, rather pellucid.

On leaves of *Tetracera Wuthiana*. Queensland.

GENUS 60. **CAPNODIUM.** *Mont.*

Mycelium effused, black; perithecia rather fleshy or carbonaceous, simple or branched, vertically elongated, sessile, or narrowed at the base, dehiscing at the apex by a fringed opening; asci obovoid-oblong; sporidia ovoid-oblong, typically 3-4 septate, with longitudinal division, brown.

**1681. Capnodium citri.** *B. & Desm.* 1849. *Sacc. Syll.* 346.

Scattered, setose or adherent; perithecia elongated, rarely bifurcate; mycelium branched, moniliform, beautifully reticulate; asci unknown; spermatia oblong, minute, hyaline,  $7\ \mu$  long.

On leaves of *Citrus*. Victoria. (Fig. 245.)

**1682. Capnodium elongatum.** *B. & Desm.* *Sacc. Syll.* 329.

Setose; perithecia elongated, acuminate or simple, with the apex fimbriate; asci (?); sporidia 2-3 septate, at length constricted at the points, and now and then longitudinally divided.

On leaves, etc. Queensland.

**1683. Capnodium australe.** *Mont. Syll.* 916. *Sacc. Syll.* 324.

Involved, velvety; perithecia somewhat dichotomous, usually obtuse; mycelium of branched moniliform fibres, with the joints shorter than their diameter; asci shortly stipitate, obovate, 8-spored; sporidia elliptic, 4-5 septate and muriform, not constricted, brown.

On branches of Conifers. Queensland.

**1684. Capnodium salicinum.** *Mont. Syll.* 915. *Sacc. Syll.* 323.

Perithecia fleshy, clavate, then horn-shaped, sometimes furcate at the apex, vertex fimbriate, seated on a mass of dark brown, cylindrical branched threads; asci obovate, club-shaped; sporidia oblong, triseptate, then muriform ( $16-23 \times 7-9\ \mu$ ).

On *Xanthoxylon*. Muellersville.

GENUS 61. **CORYNELIA.** *Fries Obs.* II., 343.

Perithecia flask-shaped, coriaceous, black, produced upwards into a neck, which is expanded in funnel-shaped manner at the apex, collected in tufts which are scattered, seated on an erumpent pulvinate stroma; asci ovate, on long pedicels, 8-spored; sporidia globose, continuous, even, brown.

**1685. Corynelia uberata.** *Fr. Sys. Myc.* II., 535.

Perithecia flask-shaped, coriaceous, black, neck elongated, cylindrical, pierced with a pore, at length with the apex dilated, tufts rounded, scattered (1-3 m.m. broad), seated on a pulvinate, erumpent stroma; asci ovate, pedicellate ( $36-44 \times 20-36\ \mu$ ); sporidia conglutinate, globose or angular, even, continuous, dark brown,  $10-11\ \mu$  diam.; spermatia oblong, fusiform, continuous, hyaline ( $6-7 \times 2\ \mu$ ).

On *Podocarpus*. N. Zealand. (Fig. 242.)



GENUS 62. **ANTENNARIA.** *Link.*

Characters of *Capnodium*, but perithecia minute and lateral, not ascigerous.

**1686. *Antennaria scoriadea.*** *Berk. Hook. Journ.* 1845, 70.  
*Sacc. Syll.* 364.

Spongy, black, flocci fasciculate, for the most part moniliform, or in the ultimate filaments, continuous and even; perithecia somewhat elliptic, irregular.

On branches, etc. Victoria. N.S.Wales. W. Australia. Snowy Mountains. (Fig. 246.)

**1687. *Antennaria Robinsoni.*** *B. & M. Mont. Syll.* 1066.  
*Sacc. Syll.* 362.

Mycelium expanded, and cloth-like, fibres very thin, elongated, branched or moniliform, with the joints equal; perithecia either lateral and ovoid, or in continuity with the fibrils, oblong.

On ferns, etc. Victoria. N. Zealand.

**1688. *Antennaria semiovata.*** *B. & Br. Ann. N. H.* 874.  
*Sacc. Syll.* 366.

Mycelium dense, black, forming a cloth-like coating on the leaves; fertile threads erect, short, branched, the joints torulose; pycnidia semi-ovate; perithecia curved, acuminate.

On ferns, etc. Queensland.

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4. **PHYCOMYCETÆ.** *DBy.*

Fungi with an unicellular mycelium, parasitic in animals and plants, rarely saprophytal, aerial or aquatic. Without true asci or perithecia. Generation agamic or sexual.

FAMILY 1.	.	.	.	.	.	<i>Mucoraceæ.</i>
" 2.	.	.	.	.	.	<i>Peronosporaceæ.</i>
" 3.	.	.	.	.	.	<i>Saprolegniaceæ.</i>
" 4.	.	.	.	.	.	<i>Entomophthoraceæ.</i>
<i>Receding forms.</i>						
" 5.	.	.	.	.	.	<i>Chytridiaceæ.</i>
" 6.	.	.	.	.	.	<i>Protomycetaceæ.</i>

*Family 1.* **MUCORACEÆ.** *DBy.*

Hyphæ producing sporangia, reproduction non-sexual by spores or chlamydospores, sexual by zygospores. Aerial fungi, growing on putrescent substances.

GENUS 1. **PILOBOLUS.** *Tode.*

Hyphæ erect, simple, continuous, dripping, gradually bullate from the attenuated base, ejecting the sporangium from the apex. Sporangia globose-depressed, black. Spores unilocular, globose, hyaline, then pallid.

**1689. Pilobolus crystallinus.** *Tode. Meck. 41. Sacc. Syll. 502.*

Threads slender, pellucid, weeping, yellowish, clavate at the apex (5-7 m.m. high). Sporangia hemispherical (300  $\mu$  broad), black, verrucose, cuticle reticulate, columella conoid, dark blue; spores uniform, elliptic, epispore thin (7-10  $\times$  5-6  $\mu$ ), pale yellowish.

On dung. Queensland.

GENUS 2. **MUCOR.** *Mich.*

Sporange-bearing hyphæ erect or branched, often septate; mycelium creeping, hyaline, septate; sporangia globose or pulvinate; columella cup-shaped. Spores one-celled, globose, hyaline, or coloured.

**1690. Mucor mucedo.** *Linn. Sp. Sacc. Syll. 615.*

Sporangiferous hyphæ simple, erect, dingy yellowish, or rather brownish, 3-10 c.m. long, sporangia sphaeroid, very delicately echinulate, yellow or greenish grey, when dry dark brown, minute; spores ellipsoid or ovoid-ellipsoid, simple, even, becoming yellowish, 6-9  $\times$  3-4  $\mu$ . Zygospores sphaeroid, epispore studded with irregular prominences, black, 99-214  $\mu$  diam. Columella ovoid, yellow-brown.

On putrid organic substances. N.S.Wales. Port Darwin. (Fig. 247.)

**1691. *Mucor cervinoleucus*. Berk. Fl. Tasm. II., 282.**

Flocci simple, erect, white below, ochraceous above; sporangia globose, tawny; spores ovoid or subcymbiform, 10  $\mu$  long.

On dung. Tasmania.

GENUS 2. **PHYCOMYCES**. Kunze.

Sporangiferous hyphæ erect, not branched, continuous, shining, now and then very long; sporangia sphaeroid, or pear-shaped, brown, very thin, broken when mature, and forming a ring at the base of the columella. Spores ovoid or sphaeroid, hyaline. Zygosporic branches arcuate and spinose, spines rigid, dichotomous.

**1692. *Phycomyces nitens*. Kunze Myk. Hft. II., 113. Sacc. Syll. 696.**

Sporangiferous hyphæ decumbent, shining, brass-colour, continuous, 10-20 c.m. long, disposed in an effused, mycelial stratum, with thick branches, 3-4 together rising from the mycelium, sporangia globose, many-spored, turning black and opaque, columella at first sphaeroid, then cylindrical; spores ellipsoid, elongated, obtuse, 20-30  $\times$  12-15  $\mu$ , pale olive.

On fatty substances. Broadribb River. (Fig. 248.)

GENUS 3. **SPINELLUS**. Van Tiegh.

Filaments of mycelium at first hyaline, then brownish above, branched. Branches perpendicular, solitary, or verticillate, bearing numerous acute spines, at first hyaline, then brown, sporangiferous hyphæ erect, simple, hyaline, then coloured, spores coloured. Sexual branches equal, approximate, then divergent, at length recurved.

**1693. *Spinellus gigasporus*. Cke. & Mass. Grev. XVIII., 26.**

Fertile threads simple, decumbent, shining olive, continuous (40-45  $\mu$  thick). Sporangia subglobose (220-250  $\mu$ ); columella cylindrical, rounded at the apex. Spores elongated, ellipsoid, olive (50-60  $\times$  13-15  $\mu$ ). Threads of zygosporangia flexuous, thinner, darker, septate; zygosporangia compressedly globose, rugulose, dark brown (70-80  $\times$  55-60  $\mu$ ). Arms arcuate, even, not spinulose.

On decaying *Agarics*. Victoria. (Fig. 250.)

GENUS 4. **CIRCINELLA**. Tieg. & Mon.

Sporangiferous hyphæ erect, branched; sporangia globose, polysporous on recurved peduncles, with a columella, membrane not diffuent at the centre, spores sphaeroid, hyaline, or coloured.

**1694. *Circinella umbellata*. Tieg. & Mon. Ann. Sci. Nat. 1873, t. 21, f. 18-23. = *Helicostylum moreliae*. B. & Br.**

Sporangiferous hyphæ erect, 5-6 c.m. high, simple or branched, the apex acute or digitate, rectangularly bent, with 2-20 circinating branchlets at the angles, septate at the base, brown. Sporangia sphaeroid, becoming bluish; columella cylindrically conical, large; spores globose, even, bluish, 6-8  $\mu$  diam.

On putrid substances. Queensland. (Fig. 249.)

In the Queensland form *Moreliæ*, the spores a little larger and very pale brown.

*Family II. PERONOSPORACEÆ. DBy.*

Hyphæ often branched, conidia often producing zoospores, thereupon germinating. Reproduction agamic, either by zoospores or by conidia directly germinating, or sexual by oogonia and antheridia.

**GENUS 5. CYSTOPUS. Lev.**

Conidia-bearing hyphæ simple, even, cylindrical or clavate, very obtuse, congregated in pulvinate sori, bearing chains of conidia at the apices. Sori at first covered, then ruptured, dispersing the conidia, white or yellowish. Conidia hyaline, producing zoospores. Oospores globose, epispore usually reticulate or warted.

**1695. *Cystopus candidus.* Lev. Ann. Sci. Nat. 1847 t. viii., p. 371. Sacc. Syll. 792.**

Sori erumpent, white, variable; conidia uniform, globose, 10-18  $\mu$ , enclosing membrane equal, colourless, oospores subglobose, 35-40  $\mu$ , epispore yellow-brown, studded with thick, irregular, obtuse, sometimes confluent, warts.

On leaves, stems, etc., of *Cruciferae*. Victoria. (Fig. 251.)

**GENUS 6. SCLEROSPORA. Schr.**

Conidia-bearing hyphæ erect, with a few branches; conidia ovate, producing zoospores, which escape at the papillate apex. Oospores globose, with a very thick epispore of many strata, brown.

**1696. *Sclerospora macrospora.* Sacc. Hedwigia 1890, 155.**

Conidia state unknown. Oogonia thickly parallel, seriate, covered by the epidermis, rugosely punctulate, becoming brownish. Oospores sphaerial, large (60-65  $\mu$ ), epispore even, bistratose, hyaline-brownish, many nucleate within, arising from narrow, branched, hyaline hyphæ.

On leaves of *Alopecurus*. Caromby.

**GENUS 7. PERONOSPORA. Corda.**

Mycelium bearing filiform, branched haustoria. Conidia-bearing hyphæ solitary, or fasciculate, cylindrical, many times branched. Terminal branchlets acute, curved or subulate, conidia ovate or elliptic, without apical papillæ, germinating laterally.

**1697. *Peronospora hyoscyami.* DeBary Champ. Par. 1863, p. 123. Sacc. Syll. 877.**

Conidia-bearing hyphæ thick, tall, 5-7 or 8 times dichotomous; branches spreading, attenuated, straight or slightly curved, the ultimate branchlets diverging at a very obtuse angle, short, conically subulate, straight, acute; conidia few, ellipsoid, quite obtuse, membrane slightly tinged violet, 13-24  $\times$  13-18  $\mu$ .

On Tobacco leaves. Queensland. (Fig. 252.)

*Family III. CHYTRIDIACEÆ. DBy.*

Hyphæ none, or obsolete, and then sporangia naked, reproduction agamic by zoospores. Resting spores formed from the encysted zoospores, or from a single vegetable cell, or by conjunction of two cells.

**GENUS 8. SYNCHYTRIUM. DBy.**

Minute unicellular fungi, entirely destitute of mycelium, inhabiting the epidermal cells of living plants, reproduction by zoogonidia produced in resting spores or asci; no sexual reproduction known.

**1698. Synchronium taraxaci. DBary Chytr. Sacc. Syll. 999.**

Spots crust-like, confluent, orange-red, galls small, flattened, scarcely projecting above the surface of the leaf; resting spores globose, brown, smooth (50-80  $\mu$  diam.). Sori globose or elliptical.

On leaves of *Compositæ*. Victoria. (Fig. 254.)

**1699. Synchronium succisæ. DeBary Chytr. Sacc. Syll. 1002.**

Zoosporangial cells (100-170  $\mu$ ), containing the sporangia (25-50  $\mu$ ), filled with an orange-red protoplasm, resting spores produced in a gall-like tubercle, globose or ellipsoid (50-80  $\mu$ ), with a tawny-brown epispore, and a pale red protoplasm. Galls wart-like, shortly cylindrical (1 m.m. high and broad), solitary, or confluent in a brown crust.

On stems and leaves. Victoria.

*Family IV. PROTOMYCETACEÆ. DBy.*

Mycelium intracellular, vaguely branched, and septate, producing numerous intercalary, thick-walled resting spores. Conidia unknown. Resting spores globose, or broadly elliptical; in germination the thin endospore escapes entire, though a rupture in the wall of the resting spore, as a sporangium filled with numerous minute, cylindrical, motionless spores, which conjugate in pairs, and produce a mycelium by germination.

**GENUS 9. PROTOMYCES. Unger.**

Parasitic in the subepidermal tissues of living plants, usually forming coloured spots or patches; resting spores terminal or intercalary, wall thick, usually consisting of two distinct layers, hyaline or coloured.

**1700. Protomyces macrosporus. Unger. Sacc. Syll. VII. 1120.**

Spores usually aggregated in scattered, oblong, or subglobose gibbous spots, which are at first pale and translucent, then brown; spores subglobose (30-80  $\mu$ ), epispore pale yellow, smooth; sporidia cylindrical, hyaline ( $2-2\frac{1}{2} \times 1 \mu$ ).

On *Hydrocotyle*. Queensland. (Fig. 253.)

5. **HYPODERMEÆ.**

Flourishing in the parenchyma of living plants. Spores mostly pulverulent.

Section 1. **USTILAGINEÆ.** *Tul.*GENUS 1. **USTILAGO.** *Pers.*

Vegetative mycelium penetrating the matrix, soon evanescent. Spore-bearing mycelium branched, gelatinous, swelling; spores terminal, botryoid on the branches, resolved in maturity into a pulverulent or granulose, at length crumpled mass; sporidiola solitary, promycelium usually acrogenous.

\* *Spores smooth.*

**1701. Ustilago australis.** *Cooke Grer. Sacc. Syll.* 1657.

Produced within the ovaries; spores black, subglobose or angular and deformed, even, 8-9  $\mu$  diam.

On fruit of *Eriachne*. Victoria.

**1702. Ustilago confusa.** *Mussee.* = *U. destruens.* *Berk. in Herb.* 4744.

Sori produced in the ovary, soon naked, mass of spores pulverulent, violet-black; spores clear brown, with a tinge of violet by transmitted light, epispore about 1  $\mu$ , thick, perfectly smooth, subglobose or irregularly angular, 11-12  $\mu$  diam.

On *Panicum paradoxum*. Victoria. (Fig. 255.)

**1703. Ustilago destruens.** *Schlecht. Berol.* 130. *Sacc. Syll.* 1645.

Sori black, pulverulent, blackening the flowers and panicles, and destroying the ovaries; spores globose or ellipsoid (9-12  $\times$  8-10  $\mu$ ), rarely angular, epispore yellow brown, even or punctulate; promycelium filiform, cylindrical, for the most part triseptate, joints anastomosing; sporidioles lateral, or terminal, oblong elliptic or ovoid.

On *Danthonia*. Victoria.

**1704. Ustilago Muelleriana.** *Thum. Myc. Univ.* 625. *Sacc. Syll.* 1664.

Spores irregularly rounded, or with many angles, or quadrangular, or spherical, or subglobose, at length agglomerated, brown, epispore even, obsoletely punctulate, 6½-11  $\mu$  diam.

On seeds of *Juncus planifolius*. Victoria.

**1705. Ustilago axicola.** *Berk. Ann. Nat. Hist.* 1852, No. 55. = *U. fimbriatylis.* *Thum. Bull. Torr. Club.* 1876? *Sacc. Syll.* 1670.

Forming little dusty, irregular balls, principally on the lower spikelets, and in these generally occupying the inferior portion of

their axis ; spores somewhat globose, smooth, rather pellucid (not adhering together), mixed with hyaline filaments (12-14  $\mu$  diam.).

In fruits and panicles of *Cyperus sinbristylis*. Victoria. Queensland.

The type of *U. axicola* is not *Cintractia*.

**1706. *Ustilago pilulæformis*.** Berk. Hook. Journ. II., 523. Sacc. Syll. 1665.

Compact, black ; spores ovate or ovoid angulate, 16-20  $\times$  12-16  $\mu$ , even, epispore unequally thickened.

In ovaries of *Juncus*. Victoria.

**1707. *Ustilago leucoderma*.** Berk. Domin. No. 54. Sacc. Syll. 1671.

Sori black, seated on large spots, somewhat covered with an unequal, whitish crust ; spores rounded, rarely irregular (13-17  $\mu$  diam.), opaque, black, even.

On sheaths of *Carex*, etc. Victoria. Queensland.

**1708. *Ustilago marmorata*.** Berk. Linn. Journ. XIII., 174. Sacc. Syll. 1675.

Compact ; marbling the yet unbroken epidermis ; spores ovate, 12  $\times$  6 $\frac{1}{2}$   $\mu$ , even.

On leaves of *Isolepis prolifera*. M. Gambier. S. Australia. Victoria.

**\*\* Spores granulate, papillose, or warted.**

**1709. *Ustilago segetum*.** Bull. Sacc. Syll. 1676.

Pustules black or olive brown, pulverulent, covered by the epidermis, which is soon ruptured, free ; spores globose or oblong, often irregularly angular, 4 $\frac{1}{2}$ -8  $\times$  4 $\frac{1}{2}$ -6  $\mu$  ; epispore yellow, then olive brown, even or punctulate.

On *Aristida*, *Danthonia*, and *Avena sativa*. Victoria. Queensland.

**1710. *Ustilago bromivora*.** Walldh. Ustil. p. 215. Sacc. Syll. 1677.

Pustules dark brown, at first bullate and pustuliform, then powdery ; spores globose or ellipsoid, rarely ovate, 8-14  $\times$  6-10  $\mu$  ; epispore dark brown, covered with scarcely distinct papillæ, or nearly even.

On *Bromus mollis*, *arenarius*. E. Australia. Victoria. N.S. Wales.

**1711. *Ustilago caricis*.** Pers. Fckl. Symb. 39.=*Ustilago urceolorum*.—Tul. Ann. Sci. Nat. 1847, VII., 86. Sacc. Syll. 1685.

Sori black, produced within the ovaries, sometimes also external, compact ; spores irregular (12-24  $\times$  7-20  $\mu$ ), globose, elliptic, oblong, angular, often compressed, epispore dark brown, rather opaque, scarcely conspicuously punctate.

On *Carices*. New Zealand.

**1712. *Ustilago Tepperi*.** *Lud. Bot. Centr.* 1889, p. 341.

Powder of the spores black, destroying the floral parts and the upper portion of the culms; spores for the most part spherical or shortly ellipsoid, 12-17  $\mu$  diam., brown; epispore papillate or rather aculeate.

On *Amphipogonis strictus* and *Neurachnes alopecuroides*. Torrens Gorge and Highbury Scrub.

**1713. *Ustilago bullata*.** *Berk. Fl. N. Zeal. t.* 106, *f.* 12. *Sacc. Syll.* 1704.

Pustules black; spores globose, ovoid, rounded, or elliptic, 7-10, usually 8  $\mu$  diam., very pale, olive-brown, epispore rufescent, papillosely granulate.

On inflorescence of *Triticum*. S. Australia. Victoria. N.S. Wales. N. Zealand.

**1714. *Ustilago emodensis*.** *Berk. Decades No.* 354. *Sacc. Syll.* 1712.

Spores elliptical, and obovate, delicately rugulose, small, dark lilac, 12-15  $\mu$  diam., mixed with radiating furcating filaments.

On stems, etc., of *Polygonum*. Queensland.

**1715. *Ustilago sclerotiformis*.** *Cke. & Mass. Grev.* xvii., 8.

Black, compact, obovate, large (2 m.m. diam.), never becoming powdery; spores subglobose, dark umber (16-18  $\mu$  diam.), epispore granulose.

Absorbing the ovaries of *Uncinia caespitosa*. New Zealand.

\* \* \* *Spores aculeate.*

**1716. *Ustilago Cesatii*.** *Wadh. Apercu.* 25. *Sacc. Syll.* 1728.

Pustules black; spores unequal, rounded, 10-12  $\mu$  diam., ovate or rounded, polyhedral,  $14 \times 12 \mu$ , or oblong polyhedral,  $12-14 \times 8-10 \mu$ , dark brown; epispore thick, shortly aculeolate.

On *Paspalum scrobiculatum*. Victoria. Queensland.

\*\* \* *Spores marked with lines.*

**1717. *Ustilago utriculosa*.** *Tul. Mem. Ust. p.* 102. *Sacc. Syll.* 1737.

Pustules dark violet, becoming with age violet-brown, pulverulent, erumpent by the fissure of the epidermis; spores globose or ellipsoid, 9-14  $\mu$  diam., epispore bright violet, becoming violet-brown when dry, beautifully reticulate (areolae 3  $\mu$  broad).

In ovaries and stems of *Polygonum minus* and *P. gracile*. Victoria. River Tambo.

**GENUS 2. *TILLETIA*.** *Tul.*

Characters as in *Ustilago*, sporidiola elongated, linear, promycelium acrogenous, sori when mature pulverulent; epispore for the most part areolate.



- 1718. *Tilletia caries*.** *Tul. Mem. Ust.* 113. = *Tilletia tritici*.  
*Sacc. Syll.* 1760.

Pustules black, then olive-brown, odour fœtid, developed in the ovaries, always covered by the epidermis, soon powdery. Spores globose, 14-20  $\mu$ , brown, reticulated, areolæ 3  $\mu$  broad.

In ovaries of wheat. S. Australia. Victoria. N.S.Wales. Queensland. Tasmania. (Fig. 257.)

- 1719. *Tilletia epiphylla*.** *B. & Br. Brisbane Fungi No.* 237.  
*Sacc. Syll.* 1783.

Pustules short, epiphyllous; spores globose, 35  $\mu$  diam., granular within, even, brown.

On leaves of maize. Queensland.

### GENUS 3. **ENTYLOMA.** *DeBary.*

Mycelium intercellular, not gelatinous; spores solitary, sometimes crowded; epispore thick, often stratified, hyaline or coloured, even or foveolate; promycelium filiform, sporidioles acrogenous, elongated. Conidia acrogenous on short hyphæ, forming indeterminate white tufts.

- 1720. *Entyloma eugeniarum*.** *Cke. & Mass. Grer.* xix., 92.

Sori in irregular dark brown pustules, which are flattened, rounded or confluent and then angular ( $\frac{1}{2}$  m.m.), collected in large hypophyllous patches. Spores globose, oblong, or angular (10-20  $\times$  10-12  $\mu$ ). Epispore very thick, even, pale brown.

On leaves of *Eugenia*. Queensland. (Fig. 262.)

### GENUS 4. **SPHACELOTHECA.** *DBy.*

Part of the mycelium converted into a central fleshy columella, surrounded by the mass of spores. Spores solitary, sporidiola acrogenous, on a septulate promycelium.

- 1721. *Sphacelotheca hydropiperis*.** *Schum. Sacc. Syll.* 1834. = *Ustilago candollei*. *Tul. Mem.*

Horn-shaped, evolved in the more or less swollen ovaries, replete with dark violet powder, opening at the apex and emitting the spores; spores solitary, globose, or ellipsoid or rounded, angular, 9-20  $\times$  8-12  $\mu$ , or 8-17  $\mu$ . Epispore even, dark violet, delicately granulose.

In ovaries of *Polygonum*. (Fig. 262.)

var. **columellifera**, *Berk.* (U. *Berkeleyana*, *Fisch. d Waldh.*), differs only in the more distinct columella, or what appears to be a columella.

On *Polygonum*. Australia. (Fig. 262a.)

### GENUS 5. **DOASSANSIA.** *Cornu.*

Spores agglomerated, even, enclosed in a common tegument formed from closely adnate, simple, sterile cells.

- 1722. *Doassansia punctiformis*.** *Wint. Fungi Austr.* 1886, p. 207. *Sacc. Syll.* 1847.

Pustules amphigenous, globose, punctiform, very minute, scattered or rather gregarious, brownish; spores numerous, con-

globose, rounded-polygonal, 10-12  $\mu$  diam., or a little elongated,  $9 \times 10\frac{1}{2}$   $\mu$ ; epispore thin, equal, even, subhyaline, common tegument formed from one stratum of parenchymatic cells, membrane thick, brown.

On leaves of *Lythrum hyssopifolium*. Victoria.

#### GENUS 6. **THECAPHORA.** *Fing.*

Spores closely clustered in glomerules, with difficulty separated, large, convex on the free side, and flattened on the adhering side; sporidiola fusoid, acrogenous.

- 1723. *Thecaphora inquinans.*** *B. & Br. Fungi Cey.* 844.  
= *Thecaphora globuligera.* *B. & Br. Linn. Trans.* 1879.  
*Sacc. Syll.* 1861.

Pustules subglobose or oblong, nestling in the paleæ, composed of numerous spores, which are subglobose, 7-12  $\mu$  diam.; echinulate, pale brown; glomerules, 70-200  $\mu$  diam. (The spores are pentagonal, with obtuse angles, united at the angles).

On *Leersia hexandra*. Queensland.

- 1724. *Thecaphora leptocarpi.*** *Berk. Linn. Journ.* XVIII., 388. *Sacc. Syll.* 1868.

Glomerules composed of about 10 globose spores, which are a little compressed, but ultimately falling away into a black powder; spores smooth, pale brownish, 12  $\mu$  diam.

In ovaries of *Leptocarpus tenax*. Wilson's Promontory. (Fig. 258.)

#### GENUS 7. **SOROSPORIUM.** *Rud.*

Spores conglomerate about the hyphæ, then gelatinously involved, when mature closely united in glomerules, then free, and falling away.

- 1725. *Sorosporium eriachnes.*** *Thum. Symb. Austr.* No. 97.  
*Sacc. Syll.* 1885.

Mature fruit changed into a black, powdery mass; spores irregular or angular, subglobose, elliptic, or polyhedral, or quadrangular, even, 10-14  $\mu$  diam., united in small irregular glomerules, opaque, brown.

On *Eriachne*. Queensland.

- 1726. *Sorosporium Muellerianum.*** *Thum. Symb. Austr.*  
*Sacc. Syll.* 1884.

Infesting the inflorescence, but scarcely visible to the naked eye; spores collected, up to 100, in dark brown subrotund glomerules; spores subglobose, or polyhedral, or ellipsoid, or spherical, 8-16  $\mu$  diam., brown, pellucid, epispore smooth.

On *Cladium filum*. Victoria.

GENUS 8. **UROCYSTIS.** *Rabh.*

Pustules large, powdery, black, erumpent, glomerules composed of one or many central, larger, and numerous peripheral small spores, the larger central spores with a thick episporium, with power of germinating. The external smaller spores with a thin episporium, not germinating.

**1727. Urocystis solida.** (*B.*) *Waldh. Ust.* 236. *Sacc. Syll.* 1910.

Pustules black, globose, compact, glomerules of 3-8; spores rounded, 20  $\mu$  diam., even, rarely with 3-4 peripheral vesicles.

On *Schænus imberbis*. Victoria. Tasmania. (Fig. 259.)

GENUS 9. **GRAPHIOLA.** *Poit.*

Peridium sessile, ovate, double, exterior compact, coriaceous, interior membranaceous, incised, longer than the exterior, giving rise to fascicles of long, simple threads; spores globose, or elliptic.

**1728. Graphiola phœnicis.** *Poit. Sacc. Syll.* 1915.

Conceptacles erumpent, 1-1½ m.m. wide, ½ m.m. high, opening above, and allowing the sterile hyphæ to protrude; outer peridium black and horny, inner peridium delicate, colourless; sterile hyphæ yellow, protruding 2 m.m. or more; spores yellow in the mass, globose or elliptical, 3-6  $\mu$  diam.; membrane thick, colourless, smooth.

On palms. Queensland. (Fig. 260.)

GENUS 10. **CEREBELLA.** *Ces.*

Stroma olive brown, at first covered with spores of the same colour, then more and more swollen; spores 3, or 4 to 6, joined together; stroma turgid, compressedly ovate, transversely lacunose and plicate.

**1729. Cerebella paspali.** *Cke. & Mass. Grev. xvi.*, 15, 20. *Sacc. Syll.* 1920.

Stroma convex, hemispherical (2-3 m.m. diam.), minutely gyrose-plicate, dark olive; spores subglobose or quadrate, 3-4 adnate (20-25  $\mu$ ), then falling away, olive; separate spores, 10-12  $\mu$ ; basidia of branched interlaced hyphæ tinged red, septate towards the base.

On *Paspalum scrobiculatum*. Queensland. (Fig. 261.)

**1730. Cerebella andropogonis.** *Ces. Berk. in Gard. Chron.* 1852, p. 643. *Sacc. Syll.* 1919.

Stroma olive brown, at first covered with spores of the same colour; spores 3 or 4-6 adglutinate together; stroma cellular, turgid, compressedly ovate, transversely plicate; spores olive-brown, smooth.

On *Heteropogon contortus*. Queensland.

## Section 2. UREDINEÆ. Brougn.

GENUS 11. **UROMYCES.** Link.

Spermogonia mostly globose, immersed, neck conoid, rather prominent; æcidia regular, immersed, at first globose, then cup-shaped, open, mostly with a well-developed pseudoperidium; uredospore-bearing sori flattened, teleutospore sori more or less powdery, flattened or pulvinate; teleutospores continuous, pedicellate, germinating by an apical pore; sporidiola ovoid or ellipsoid, hyaline.

**1731. Uromyces trifolii.** Hedw. *Winter Pilze*, 159. Sacc. *Syll.* 1925.

Spermogones disposed in small clusters; æcidia orbicularly disposed, pseudoperidia cup-shaped, with a white, lacinate margin; æcidiospores 14-23  $\mu$ , verruculose, pale orange; uredospore sori rounded or elliptic, scattered, chestnut brown; spores irregularly globose, or shortly elliptic, 22-26  $\times$  18-20  $\mu$ , aculeate, brown; teleutospore sori smaller, rounded on the leaves, larger and elongated on the petioles, dark brown, bullate, teleutospores ellipsoid, globose, or pear-shaped, thickened at the apex, with a small, pale wart, 20-35  $\times$  15-22  $\mu$ , even; pedicel more or less distinct, soon falling away.

On clover. Victoria.

**1732. Uromyces betæ.** Pers. Kuhn. *Bot. Zeit.* 1869, No. 450. Sacc. *Syll.* 1928.

Spermogones in small clusters; æcidia disposed on orbicular or oblong yellow spots; pseudoperidia white, cup-shaped, with a fringed margin; æcidiospores angular, globose or oblong, 22-26  $\times$  16-22  $\mu$ , orange, even; uredospore sori cinnamon, or chestnut brown, orbicularly disposed, small; uredospores elliptic, or subglobose, 23-32  $\times$  17-24  $\mu$ , aculeate, or nearly even, yellow brown; teleutospore sori dark brown, margined by the ruptured cuticle, scattered, or orbicularly disposed; teleutospores ovate, or ellipsoid, with a wart-like papilla, 26-35  $\times$  19-25  $\mu$ , even, brown, with a thin, rather long peduncle, soon deciduous.

On leaves of *Beta*. Victoria.

**1733. Uromyces vesiculosus.** Wint. Hedw. 1885, p. 22. Sacc. *Syll.* 1955.

Sori scattered or gregarious, often confluent, rounded, or irregular, covered by the cinereous vesicular epidermis; uredospores subglobose, elliptic or ovate, yellow brownish, densely warted, epispore thin, 26-35  $\times$  19-24  $\mu$ ; teleutospores globose, elliptic, ovate, or pear-shaped, 23-31  $\times$  17-21  $\mu$ , thickened at the apex, rounded, or with a broad apiculus, epispore thick, even, dark, bay brown when mature, with a long, thick, persistent pedicel.

On leaves and stems of *Zygophyllum ammophilum*. Spencer's Gulf.

**1734. *Uromyces amygdali*.** Cooke, in *Rav. Fung. Amer. Pass. in. Erb. Critt. Ital.*

Uredospores in small hypophyllous cinnamon sori, sometimes confluent, subglobose, punctulate; teleutospores mixed, or succeeding them, clavate, apiculate, or almost lanceolate, episporium much thickened at the apex, pale, tawny, granular within,  $35-40 \times 12 \mu$ .

On peach and almond leaves. Queensland. Victoria. N.S. Wales.

We decline to accept this as agreeing with any form of *Puccinia pruni*, with which it is commonly associated.

**1735. *Uromyces fusisporus*.** Cooke & Mass. *Grev. xvi., 2. Sacc. Syll. 1980.*

Sori discoid, erumpent, black, girt by the ruptured cuticle; uredospores globose, shortly stipitate, even, brown,  $35-45 \mu$  diam.; teleutospores mixed, fusiform, with a hyaline apiculose; episporium obtusely warted, brown,  $60-70 \times 25-30 \mu$ .

On phyllodes of *Acacia salicina*. Victoria. (Fig. 264.)

**1736. *Uromyces phyllodiæ*.** Cke. & Mass. *Grev. xvii., 70.*

Sori minute, orbicular, compact, brown, crowded on elliptic, bullate brown spots, 3-5 m.m. long, at length naked, not pulverulent. Uredospores not seen; teleutospores elliptic, obtuse, rarely apiculate, brown; episporium minutely warted, rather thick, hyaline, thickened at the apex,  $40-45 \times 16-18 \mu$ .

On phyllodes of *Acacia*. Queensland.

**1737. *Uromyces digitatus*.** Wint. *Revue Mycol. 1886, p. 209. Sacc. Syll. 1982.*

Sori in the centre of rounded or orbicular, determinate spots, limited by a narrow brown line, black ( $\frac{1}{2}$ -1 m.m. diam.), solitary, white or whitish, minute, veiled by the at length ruptured cuticle; uredospores ovate or elliptic, golden brown, densely warted,  $32-35 \times 20-25 \mu$ , sometimes a little thickened at the apex, with a fragile, hyaline pedicel; teleutospores oblong, wedge-shaped, the apex thickened and bearing 3-6 finger-like, erect or divaricate processes, at first golden yellow, at length pallid,  $50-56 \times 14-18 \mu$ , on long, hyaline, persistent pedicels.

On leaves of *Acacia notabilis*. S. Australia.

**1738. *Uromyces diploglottidis*.** Cke. & Mass. *Grev. xvii., 55.*

Epiphyllous. Sori scattered, convex, minute, for a long time covered, at length splitting, pallid brown, seated on orbicular greenish spots. Teleutospores elliptic, apex obtusely acuminate, base attenuated into a short pedicel. Episporium hyaline, thick, plasma granular, pallid,  $50-60 \times 20-30 \mu$ .

On fading leaves of *Diploglottis*. Queensland.

**1739. *Uromyces Tepperianus*.** Sacc. *Hedw. 1889, 126.*

Long and broadly effused, flattened, growing beneath the cuticle of living branches, soon casting off the bark, and deforming the

branches, bright cinnamon, at length powdery; teleutospores sphaeroid, depressed, on long pedicels, cinnamon,  $20-24 \times 18-20 \mu$ , thickly channelled and striate, margin crenulate, pedicels rod-like, densely fasciculate,  $40-60 \times 3-5 \mu$ , hyaline.

On living branches of *Acacia salicina*. Victoria.

**1740. *Uromyces microtidis*. Cke. Grev. xiv., 12. Sacc. Syll. 2066.**

On both surfaces. Sori gregarious, rather hemispherical, dark brown, girt by the epidermis; teleutospores oval, rough with warts, with a hyaline apiculus at the apex, brown,  $30 \times 16 \mu$ , including the apiculus, on very short deciduous peduncles.

On leaves of *Microtis porrifolia*. N.S. Wales.

**1741. *Uromyces orchidearum*. Cke. & Mass. Grev. xvi., 74. Sacc. Syll. 2071.**

Epiphyllous, erumpent. Sori bullate, at length erumpent, brown; teleutospores subglobose, on long pedicels, bright brown, apiculate at the apex,  $40 \times 30 \mu$ ; epispore thick, hyaline, pedicels rather thick, twice as long as the spore, attenuated downwards.

On leaves of *Chiloglottis diphylla*. N.S. Wales.

**1742. *Uromyces puccinioides*. Berk. & Müll. Linn. Journ. xiii., 173. Sacc. Syll. 2100.**

*Æcidia* aggregate, on brown orbicular spots, opposite; pseudo-peridia scattered, not circinate, margin short; æcidiospores orange. (*Æcidium Goodeniacearum*, Berk.) Sori bullate; teleutospores brown, apiculate, sometimes with the apex, oblique or dentate, pedicellate.

On *Goodenia* and *Selliera*. Victoria. S. Australia. Kang Island.

GENUS 12. **MELAMPSORA. Cast.**

Spermogones forming a minute orbicular, flattened stratum. *Æcidia* destitute of a pseudoperidium; æcidiospores in chains; uredospores solitary at the apices of sterigmata, aculeolate, included in more or less developed pseudoperidia; teleutospores one-celled, obovate, wedge-shaped, intercellular, coalescing in a plane, firm black, or dark brown stratum. Sporidia globulose, yellow, then orange.

**1743. *Melampsora lini*. Tul. Ann. Sci. Nat. 1854. Sacc. Syll. 2107.**

Uredospore sori scattered, covered with a deciduous pseudoperidium, rounded, orange, minute; uredospores subsphaeroid or obovoid, pedicellate, echinulate,  $15-24 \times 14-18 \mu$ , orange yellow; paraphyses curved, apex thickened in a sphaeroid or ovoid manner,  $17-20 \mu$  thick; teleutospore sori flattened, at first red-brown, then nearly black; teleutospores densely crowded beneath the epidermis, cylindrically prismatic,  $45-60 \times 17-20 \mu$ .

On leaves of *Linum marginale*. S. Australia. Victoria. N.S. Wales. Hume River.

- 1744. *Melampsora nesodaphnes*.** *B. & Br. Linn. Trans.* II., 67, t. 15, f. 9. *Sacc. Syll.* 2124.

Mass of spores pulverulent, villose, ochraceous, forming on the surface of the fruit, oblong or pear-shaped, delicately granulated, 12-38  $\mu$  long.

On fruit of *Nesodaphne obtusifolia*. Queensland.

- 1745. *Melampsora phyllodiorum*.** *B. & Br. Linn. Trans.* II., 67, t. 15, f. 6-8. *Sacc. Syll.* 2125.

Sori in amphigenous tubercles; spores arising from delicate filaments, rather fusiform, 55-58  $\mu$  long, granulated, mixed with others which are elongated, uniseptate, fusiform, even, 22  $\mu$  long.

On phyllodes of *Acacia*. Queensland. (Fig. 265.)

### GENUS 13. **CRONARTIUM.** *Fr.*

Uredospores included in brown pseudoperidia, teleutospores one-celled, a cylindrically elongated columella arising from the middle of the pseudoperidium, to which they for the most part closely coalesce. Sporidiola subglobose, hyaline.

- 1746. *Cronartium asclepiadeum*.** *Fr. Obs.* 1., 220. *Sacc. Syll.* 2137.

Uredospore sori pustular, hypophyllous, scattered, aggregated, or obsoletely circinating, pseudoperidia membranaceous, pierced with an apical pore, or variedly lacerated, brown; uredospores ovoid or ellipsoid, sphaeroid, echinulate, at first pedicellate, 16-32  $\times$  12-18  $\mu$ , pale orange; columella of the teleutospore sori tapering, 2 m.m. long, simple, rarely forked, teleutospores oblong, obtuse, sessile, even, hyaline, yellowish, 10-12  $\mu$  broad. Sporidiola sphaeroid, pale golden.

On *Jacksonia scoparia*. Queensland. (Fig. 266.)

## 2. DIDYMOSPORÆ.

### GENUS 14. **PUCCINIA.** *Pers.*

Æcidia, spermogones, and uredospores as in *Uromyces*; teleutospores transversely uniseptate (rarely biseptate), germinating from a pore in each cell, crowded in flattened or pulvinate sori (commonly) pulverulent, at first covered by the epidermis; sporidiola ovoid or kidney-shaped, usually hyaline.

- 1747. *Puccinia helianthi*.** *Schw. Syn. Car.* 73. *Sacc. Syll.* 2150.

Spermogones disposed in small clusters. Æcidia crowded or orbicular, or congregated in broadly expanded, oblong spots; pseudoperidia cylindrical, plane, margin white, lacinate; æcidiospores orange-red; uredospores crowded in minute, rounded, chestnut-brown sori, globose, shortly elliptic or ovate, 22-26  $\times$  17-22  $\mu$ , sparingly and minutely aculeolate, epispore subhyaline; teleutospores congregated in roundish, prominent, scattered, or sometimes gregarious, dark brown or black sori, oblong ellipsoid or ovate, rounded at the base, slightly constricted in the middle,

38-50  $\times$  20-27  $\mu$ , even, dark chestnut-brown, with a hyaline pedicel, more or less persistent, equal or longer than the teleutospore.

On sunflower leaves. Queensland. N.S.Wales.

**1748. *Puccinia prenanthis*.** Pers. Sacc. Syll. 2157. =  
*Puccinia chondrillæ*. Corda Ic. iv., 46.

*Spermogones* disposed in small clusters. *Æcidia* on orbicular or elongated linear spots; pseudoperidia none, *acidiospores* irregularly globose or polygonal, rarely oblong, pale orange-yellow, warted, 15-26  $\times$  12-20  $\mu$ . *Uredospores* crowded in scattered, or irregularly, or orbiculate distributed, minute, rounded, pale brown sori, long covered by the epidermis, globose, 17-22  $\mu$ , ochraceous, delicately aculeolate. *Teleutospores* crowded in small, rounded, elliptical, or linear dark brown sori, long covered by the epidermis, at length naked, elliptical or ovoid-oblong, rounded at the ends, or flattened above, slightly or not constricted in the middle, 26-44  $\times$  17-26  $\mu$ , delicately muriculate, brown, on short, slender, hyaline, deciduous pedicels.

On *Lactuca*, etc. S. Australia. Victoria. N.S.Wales.

**1749. *Puccinia caulicola*.** Corda Icon. iv., f. 15.

Spots none, sori oblong, mostly solitary, girt by the ruptured epidermis, rufous. *Teleutospores* yellow-brown, epispore smooth, cells triquetrous, sometimes the upper one flattened at the apex, on long pedicels.

On *Hypochaeris glabra*. Queensland.

Possibly form of *P. hieracii*.

**1750. *Puccinia violæ*.** Schum. Sacc. Syll. 2163.

*Spermogones* disposed in large or small clusters; *æcidia* developed on all the green parts of the plant, spots on the leaves yellowish; pseudoperidia flattened, margin white, revolute, lacinate (*Æcidium violarum*), *acidiospores* warted, somewhat orange, 16-24  $\times$  10-18  $\mu$ . *Uredospores* crowded, in hypophyllous scattered, or orbiculate distributed, cinnamon or brown sori, girt by the remains of the fissured epidermis, subspheroid or elliptic, 21-26  $\times$  17-23  $\mu$  (*Uredo violarum*); *teleutospores* crowded in hypophyllous, minute, dingy brown sori, gregarious on yellowish spots, elliptical or oblong-ovoid, rounded at the ends, scarcely or not constricted at the middle, 20-35  $\times$  15-20  $\mu$ , even, with a hyaline apiculus, brown, pedicels deciduous.

On different species of *Viola*. Victoria.

**1751. *Puccinia ægra*.** Grove Journ. Bot. 1883, 274. Sacc. Syll. 2174.

Spots none, pseudoperidia scattered, at first rounded, then oblong, margin revolute, white, *acidiospores* globose or oblong, angular, 17-21  $\times$  14-16  $\mu$ , even, orange-yellow (*Æcidium depauperans*). *Uredospore* sori numerous, punctiform on both surfaces, seated on large yellow spots, scattered or gregarious



rounded, convex, covered with the persistent silvery epidermis; uredospores elliptic or obovate,  $28-30\ \mu$  long, finely echinulate, brown; teleutospore sori similar, teleutospores elliptic, oblong, or rounded, irregular, rounded or narrowed, or truncate at the apex, not constricted,  $22-30 \times 18-24\ \mu$ , even, dark brown.

On leaves of *Viola hederacea*. Victoria.

**1752. *Puccinia lagenophoræ*.** Cooke Grev. XIII., p. 6. Sacc. Syll. 2169.

*Æcidia* epiphyllous, spots none, pseudoperidia scattered, semi-immersed, margin lacerated, white, æcidiospores globose,  $12\ \mu$  diam.; uredospore sori scattered, small, pulverulent, brown, or mixed with the following; uredospores globose,  $20\ \mu$  diam., brown, epispore rough; teleutospore sori scattered, dark brown, rather powdery, teleutospores clavate, constricted in the middle, brown, upper cell darkest, obtuse, subglobose, epispore thickened, even, lower cell attenuated into a short pedicel,  $40-45 \times 20\ \mu$ .

On leaves of *Lagenophora Billardieri*. Victoria.

**1753. *Puccinia graminis*.** Pers. Desp. Fung. 39. Sacc. Syll. 2191.

Spermogonia disposed in small clusters. *Æcidia* seated on a thickened brown subiculum, forming oblong or orbicular spots, 2-5 m.m. diam., girt by the bullate epidermis; pseudoperidia cylindrical, margin white, spreading, thinly crenulate or toothed (*Æcidium berberidis*); æcidiospores angular, sphaeroid,  $14-26\ \mu$ , even, orange; uredospores in ellipsoid, elongated, or linear, erumpent, yellow-brown or rusty sori, ellipsoid, rarely clavate,  $24-45 \times 14-21\ \mu$ , pedicellate, aculeate, yellowish (*Uredo linearis*); teleutospore sori elongated or linear, free, rather black, crustaceous, often confluent, clavate or oblong fusoid, rounded or acuminate at the apex, obtuse, narrowed at the base into the pedicel,  $34-60 \times 12-22\ \mu$ , even, constricted, pale yellow-brown.

On *Avena* and *Triticum*. S. Australia. Victoria. N.S.Wales. Queensland.

**1754. *Puccinia straminis*.** DeBary. Fekl. Symb. 59. = *P. rubigo-vera*. DC. Sacc. Syll. 2194.

Spermogones disposed in small or large clusters; æcidia distant, forming orbicular or oblong spots (1 c.m. and more diam.), pseudoperidia urn-shaped, then flattened, broad, margin revolute, dentate, whitish; æcidiospores polygonal, warted, orange,  $18-28\ \mu$  diam. (*Æcidium asperifolii*); uredospores crowded in oblong, elliptic, or linear sori, which are confluent or broadly expanded, erumpent, free, and rust colour, globose, or ellipsoid, or ovate,  $20-32 \times 17-24\ \mu$ , aculeate, pedicellate, orange-red (*Uredo rubigo-vera*); teleutospores crowded in small elliptic or linear, black sori, a long time covered, oblong, or clavate, scarcely constricted, flattened at the apex, or laterally apiculate, attenuated at the base,  $26-80 \times 16-24\ \mu$ , chestnut-brown, with a short, persistent pedicel.

On *Poa annua*, cereals, etc. S. Australia. Victoria. N.S.Wales.

**1755. *Puccinia poarum*.** *Niels. Bot. Tids. III., 26. Sacc. Syll. 2195.*

Spermogonia on epiphyllous orange spots. *Æcidia* heteræcious on orbicular spots (*Æcidium tussilaginis*.) Uredospores in sori rounded, elliptical or linear, rusty or orange-brown, spherical or ellipsoid, warted ( $20-30\ \mu$  diam.), orange-red, paraphyses numerous; teleutospores in small or large sori, scattered or orbicularly disposed, dark brown, covered by the epidermis, elliptic or subclavate, thickened at the apex and darker ( $35-50 \times 15-24\ \mu$ ), dark brown, even, on short persistent pedicels.

On species of *Poa*. Victoria.

**1756. *Puccinia phragmitis*.** *Schum. Sacc. Syll. 2204.= P. arundinacea. Hedw.*

Spermogonia and *æcidia* heteræcious (*Æcidium rubellum*, Gmel.). Uredospores in oblong sori, elliptic or broadly ovate ( $26-35 \times 15-22\ \mu$ ), warted, brown. Teleutospores in sori on both surfaces, erumpent, open, elevated, pulvinate, oblong, or linear, for the most part confluent, dark brown, elliptic, or oblong, and subfusoid ( $40-75 \times 16-26\ \mu$ ), constricted in the middle, thickened and conoid at the apex, even, dull yellow-brown, on long pedicels.

On *Phragmitis*, etc. Victoria.

**1757. *Puccinia apii*.** (*Corda.*) *Sacc. Syll. 2211=As a synonym of P. bullata, Pers.*

Uredospores in pulverulent, rather large sori, oval, obtuse, or irregular, teleutospores in large confluent sori, powdery, dark brown, girt by the remains of the epidermis, oblong, or elliptic, constricted at the septum ( $35-40 \times 20\ \mu$ ); epispore thick, smooth, on short attenuated pedicels.

On celery. Australia.

**1758. *Puccinia rumicis-scutati*.** *DC. Winter Pilze, 187. Sacc. Syll. VI., 2214.*

Sori scattered, or disposed in a circle, irregularly rounded, or (on stems and petioles) elongated, girt by the torn epidermis, brown; uredospores ellipsoid or ovoid, rarely globose or oblong ( $26-40 \times 20-28\ \mu$ ), aculeate, yellow-brown; teleutospores oblong, or clavate, a little constricted in the middle or not at all, incrassated at the apex, rounded or somewhat attenuated, narrowed at the base into the pedicel ( $38-56 \times 16-28\ \mu$ ), slightly brown, pedicel long, persistent, brown.

var. *muhlenbeckiæ*. *Cooke.*

On the upper surface, scattered, sori at first bullate; teleutospores constricted, each cell somewhat triangular ( $36 \times 12\ \mu$ ).

On leaves of *Muhlenbeckia adpressa*. Victoria.

**1759. *Puccinia Ludwigii*.** *Tepper in Bot. Centr. Blatt. 1890, p. 6.*

Uredospores globose, or oblong-rounded,  $23-25 \times 18-23\ \mu$ , delicately spinulose, or almost even, pale yellow-brown; sori of teleu-

tospores minute, circular, girt by the ruptured epidermis; teleutospores ovate, rounded, a little apiculate at the apex, constricted in the middle, shortly stipitate,  $33-35 \times 20-23 \mu$ , striately warted, dark brown.

On leaves of *Rumex Brownii*. Victoria.

**1760. *Puccinia acetosæ*.** *Schum. Sacc. Syll.* 2218. = *Puccinia rumicis*. *Lasch. Rab. F. Eur.* 496.

Sori of both forms scattered, minute on the leaves and irregularly rounded, oblong on the stems and petioles, soon naked; uredospores globose, elliptic, or pear-shaped,  $24-30 \times 20-25 \mu$ , aculeate, brownish; teleutospores oblong or subclavate, constricted at the middle, rounded at the apex,  $30-45 \times 20-25 \mu$ , rather warted, chestnut brown, on rather long, deciduous, hyaline pedicels.

On *Rumex*. Queensland.

**1761. *Puccinia Kalchbrenneri*.** *Toni. Sacc. Syll.* 2240. = *Puccinia helichrysi*. *Kalch. & Cooke. Grev.* ix., 21, not Rabenh.

Sori on both surfaces, scattered or gregarious, at first covered, convex, firm, then free and discoid, concave, ochraceous; uredospores rounded, irregularly globose, granular within, epispore rather thick ( $20-24 \mu$  diam.), pale brown; teleutospores lanceolate, uniseptate, constricted, dark-brown ( $40-55 \times 15-18 \mu$ ), epispore even, pedicels evanescent.

On leaves of *Helichrysum*. Victoria.

**1762. *Puccinia sorghi*.** *Schwz. Sacc. Syll.* 2289.

Uredospore sori on both surfaces, numerous, elliptic or spherical, scattered, or approximate, here and there confluent, rather convex, soon erumpent from the longitudinal fissure of the cuticle, reddish-brown; uredospores globose, elliptic, or ovate,  $23-30 \times 22-26 \mu$ , slightly warted, at first yellowish, then reddish-brown, on short pedicels (*Uredo maydis*). Teleutospores not recorded.

On maize. Queensland.

**1763. *Puccinia wurmbeæ*.** *Cke. & Mass. Grev.* xvi., 74. *Sacc. Syll.* 2304.

Sori elongated, bullate, dark brown; uredospores elliptic, granulate, brown,  $25-28 \times 15-18 \mu$ ; teleutospores clavate, uniseptate, slightly constricted at the middle, upper cell convex or truncate, darker, lower cell triangular, attenuated downwards into the short, hyaline pedicels, epispore even,  $60-70 \times 20-25 \mu$ .

On leaves of *Wurmbea dioica*. Queensland. (Fig. 267.)

**1764. *Puccinia Saccardoi*.** *Ludw. Hedwigia*, 1889, 362, t. 14, f. 3.

*Æcidium* in groups on brownish spots (2-4 m.m. diam.); spores polygonal, orange ( $13-15 \mu$  diam.); teleutospores in roundish or elongated sori, lower spore-cell long ( $27-33 \mu$ ), brown ( $18 \mu$  broad), upper spore-cell broader, subglobose, or quadrate ( $20-25 \times 23-30 \mu$ ), dark brown.

On *Goodenia geniculata*. Victoria.

**1765. *Puccinia aucta*.** Müll. Linn. Journ. XIII., 173. Sacc. Syll. 2337.

Pseudoperidia rounded or ovate, densely gregarious, occupying the whole surface of the leaves or petioles, ampulla-shaped, at first covered with the epidermis, then free, margin rather thick, even, ochraceous; aecidiospores irregularly globose, or variedly rounded, 18-22  $\mu$  diam., epispore punctulate, even, pale ochre (*Aecidium microstomum*, B., and *Aecid. lobeliae*, Thum.); telentospori on the under surface, seated by the median nerve, bullate, then girt by the broken epidermis; telentospores pedicellate, elongated, pallid, at length biseptate.

On leaves of *Lobelia* species. N.S. Wales. S. Australia. Victoria.

**1766. *Puccinia malvacearum*.** Mont. Fl. Chil. VIII., 43. Sacc. Syll. 2368.

Hypophyllous, closely scattered; telentospores crowded in hemispherical sori, at first veiled by the persistent epidermis; margin naked, rufous, umbilicate beneath, ovoid-oblong, 35-75  $\times$  12-26  $\mu$ , brown, even, a little constricted at the middle, obtusely acuminate, on very long pedicels (up to 120  $\mu$  long).

On *Althaea rosea* and *Malva rotundifolia*. Queensland. Victoria.

**1767. *Puccinia heterospora*.** B. & C. Sacc. Syll. 2403. = *Uromyces Thwaitesii*, B. & Br. *U. pulcherrimus*, B. & C.

Spots determinate, purplish or yellow; sori minute, hypophyllous, soon naked, crowded in orbicular glomerules, brown; telentospores elongated or subglobose, even, 15-27  $\mu$  diam., incrassated about the apex, at first continuous, at length biseptate, pedicels hyaline, slender, narrowed downwards, 3-4 times as long as the spore.

On *Abutilon crispum*. Gulf of Carpenteria.

On *Abutilon avicennae*. N.S. Wales.

**1768. *Puccinia alyxiae*.** Cke. & Mass. Grev. XVI., p. 2. Sacc. Syll. 2494.

Hypophyllous, sori discoid, compact, dark brown (1-2 m.m. diam.), girt by the ruptured epidermis; telentospores almost pear-shaped, constricted in the middle, uniseptate, yellowish, 50-70  $\times$  20-25  $\mu$ , epispore thick, even, hyaline, apiculate at the apex, pedicels rather thick, elongated, hyaline.

On leaves of *Alyxia buxifolia*. Victoria.

**1769. *Puccinia Berkeleyana*.** Toni. Sacc. Syll. 2506. = *Puccinia dichondrae*. Berk. Linn. Journ. XIII., 173 (viz Mont).

Sori minute on the lower, rarely on the upper, surface of the leaves, scattered, resembling an *Aecidium*; telentospores 12-13  $\mu$  long, shortly pedicellate, ultimate cell obtusely apiculate.

On *Dichondra repens*. Victoria.

**1770. *Puccinia rimosa*. Link. Winter Hedw. 1880, 28.**

Producing very narrow cracks (1-3-5 line long), often encircling the stems, and causing brown spots, which are either remote or approximate; teleutospores brown, some large, and others much smaller, oblong, often uniseptate, pellucid, intermixed.

On *Isolepis nodosa*. Victoria.

**GENUS 15. PHRAGMIDIUM. Link.**

Spermogones flattened, orbicular; æcidia (*Cæoma*) in roundish, broadly expanded, and confluent pustules; æcidiospores in chains; uredospores single, teleutospores transversely, 3 or many septate, upper cell with one pore, other cells furnished with four pores.

**1771. *Phragmidium Barnardi*. Plow. & Wint. Rev. Myc. 1886, 208. Sacc. Syll. 2621.**

Uredospore sori scattered on the under surface, with irregular, minute rufous spots on the upper surface ( $\frac{1}{2}$ -1 m.m. broad), uredospores globose or ellipsoid, epispore rather thick, verruculose, 17-18  $\mu$  diam., or 23-25  $\times$  16-18  $\mu$ ; teleutospore sori scattered, gregarious, very minute, not rarely confluent, without spots, pulverulent; teleutospores cylindrical, equal, rounded at the vertex, sometimes with a short hyaline, conoid apiculus, 6-9 septate, constricted, even, 60-115  $\times$  23-27  $\mu$ , brownish yellow, with very long cylindrical, or a little inflated pedicels, 140  $\mu$  long, 10-18  $\mu$  thick.

On *Rubus parvifolius*. Victoria.

**1772. *Phragmidium rosæ*. Pers. Disp. 13.=*P. mucronatum*. Cooke B. F. 490. *P. subcorticium*. Schr. Sacc. Syll. 2622.**

Uredospores in hypophyllous sori, scattered, or crowded, seated on pallid spots, orbicular, yellow, small, spores ovoid (17-22  $\times$  12-24  $\mu$ ), aculeolate; teleutospores in hypophyllous sori, scattered, gregarious, or aggregate, black, minute, spores oblong, with an acute conical apiculus, 3-8 septate, with punctate warts, dark brown (75-100  $\times$  26-30  $\mu$ ), pedicels longer than the spore, abruptly thickened at the middle, obtuse at the base.

On rose leaves. Victoria. (Fig. 268.)

**1773. *Phragmidium Potentillæ*. Pers. Sacc. Syll. 2616.**

Æcidiospores crowded in a short series, globose, ovate, or ellipsoid, 17-24  $\times$  14-19  $\mu$ , aculeolate, uredospore sori nearly orbicular, scattered or gregarious, orange, minute; uredospores sphaeroid or ovoid, or sphaeroid-ellipsoid, yellowish, aculeolate, 17-24  $\times$  14-20  $\mu$ ; teleutospore sori orbicular, rather pulvinate, black, minute; teleutospores oblong, 2-6 septate (usually 3-5), scarcely constricted, obtuse, or obtusely apiculate above, slightly attenuated below, even, yellow brown, 50-90  $\times$  20-26  $\mu$ , pedicel 2 or 3 times as long (100-150  $\mu$ ), equal, or a little thickened downwards.

On leaves of *Acæna sanguisorba*. Victoria.

GENUS 16. **HAMASPORA.** Korn.

Teleutospores multiseptate, sometimes uniseptate, free; pedicels coalesced in a prominent cylindrical gelatinous body.

**1774. *Hamasporea longissima.*** Korn. *Sacc. Syll.* 2630.

Uredosporiferous sori on the lower surface, scattered, or gregarious, or confluent, clear-orange; uredospores globose, or ovoid, even, reticulate ( $16\ \mu$  diam.), pale yellow, epispore thick; teleutospore sori gregarious, pale ochre, tendril-like; teleutospores very long, linear-lanceolate, 4 septate (or more), yellowish, apex acute, hyaline,  $200-240 \times 13-14\ \mu$ , pedicels very long, hyaline.

On leaves of *Rubus mollucanus*. Queensland. (Fig. 263.)

*Uredineæ inferiores.*GENUS 17. **ÆCIDIUM.** Pers.

Pseudoperidia cup-shaped, or urn-shaped, rarely cylindrical, for the most part pale coloured; margin often crenate or laciniate and revolute; spores globose or angular, continuous, commonly orange-yellow, growing in chains, even, or warted.

**1775. *Æcidium ranunculacearum.*** DC. *Fl. Fr.* vi., 97. *Sacc. Syll.* 2707.

Pseudoperidia hypophyllous, in roundish or elongated clusters of various sizes, cup-shaped, whitish, margin brittle; spores polygonal, orange-yellow,  $17-28 \times 14-20\ \mu$ .

On *Ranunculus rivularis* and *R. inundatus*. Victoria. Tasmania. Falkland Islands.

**1776. *Æcidium barbareæ.*** DCand. *Fl. Fr.* ii., 244. *Sacc. Syll.* 2719.

Pseudoperidia amphigenous, on rubescent spots, in irregular clusters, large, cup-shaped, rather flat, edges whitish, torn, or crenulate; spores orange, subglobose, finely verrucose,  $15-25\ \mu$  diam.

On Crucifers. N.S. Wales.

**1777. *Æcidium lobeliae.*** Thum. *Grer.* iv., 75. = *Æcidium microstomum.* Berk. *Linn. Journ.* xiii., 173.

On *Lobelia pedunculata* and *L. platycalyx*.

See *Puccinia aucta.* Müll.

**1778. *Æcidium soleniiforme.*** Berk. *Fl. Tasm.* ii., 270. *Sacc. Syll.* 2770.

Spots orbicular, brown; pseudoperidia cylindrical, elongated, white, radiately laciniate at the apex; æcidiospores rather angular, orange,  $25-26\ \mu$  diam.

On *Goodia latifolia.* Tasmania.

**1779. *Æcidium compositarum.*** Mart. *Erl.* 314. *Sacc. Syll.* 2815.

Spots purplish, subrotund, and confluent; pseudoperidia crowded on the spots, in orbicular patches, or circinating; margin white,

revolute, laciniate; æcidiospores oval or subglobose, 15-20  $\mu$  diam. (numerous varieties).

On leaves of *Senecio Velleyioides*. N.S.Wales.

On other *Compositæ*. Victoria.

**1780. *Æcidium apocyni*.** *Schwein. Syn. Car.* 448. *Sacc. Syll.* 2857. = *Æ. apocynatum*. *Schw.*

Spots thin, orbicular, large, orange, pallid beneath; pseudoperidia disposed concentrically in circles, closed, yellow-bay or brownish, then open; margin torn, pallid; æcidiospores simple, subhyaline.

On *Tabernemontana orientalis*. Queensland.

**1781. *Æcidium nymphoides*.** *DCand. Fl. Fr.* II., 597. *Sacc. Syll.* 2864. = *Æ. nymphoidearum*. *Berk.*

Epiphyllous; pseudoperidia gregarious, disposed without order on rounded spots, or in concentric zones, scutelliform, margin scarcely prominent, entire; æcidiospores angular, 12-20  $\mu$  diam., orange yellow.

On *Limnanthemum indicum*. Queensland.

**1782. *Æcidium plantaginis*.** *Ces. Erb. Critt. Ital.* 247. *Sacc. Syll.* 2879.

Spots for the most part small, sometimes effused and broad; pseudoperidia circinate or loosely scattered, on both surfaces, shortly cylindrical, the margin not at all or but slightly recurved; æcidiospores subglobose or elliptic, 18-21  $\mu$  diam., tuberculate.

On leaves of *Plantago*. Victoria. N.S.Wales.

**1783. *Æcidium veronicæ*.** *Berk. in Herb. Grev.* XI., 97. *Sacc. Syll.* 2887.

Scattered, semi-immersed, cups with the margins fimbriate. (Specimens old, discoloured, and the æcidiospores dispersed).

On *Veronica*. Victoria.

**1784. *Æcidium callixenis*.** *Berk. in Herb.* 5163. *Sacc. Syll.* 2946.

Hypophyllous, scattered, prominent; margin even, turned inwards; æcidiospores globose (description essentially imperfect).

On *Callixene marginata*. Falkland Islands.

**1785. *Æcidium cystoseiroides*.** *Berk. Fl. Tasm.* 270. *Sacc. Syll.* 2970.

Pustulate, deforming the leaves; pseudoperidia immersed; æcidiospores rather angular, orange.

On *Opercularia*. Tasmania.

***Æcidium cymbonoti*.** *Thum. in Müll. Supp. Phyt. Austr.* 96. *Sacc. Syll.* 2972.

We find no clue to the description of this species.

On leaves of *Cymbonotus*. Victoria.

- 1786. *Æcidium Goodeniacearum*.** Berk. Linn. Journ. XIII., 173. See *Uromyces puccinioides*. B.

Spots orbicular, brown beneath, or obsolete, pseudoperidia scattered (or circinate), with an abbreviated margin, spores orange.

On *Selliera*. N.S.Wales. S. Australia. Victoria. (Fig. 269.)

- 1787. *Æcidium bellidis*.** Thum. Fung. Austr. 635.

Pseudoperidia on large roundish, or elongate, discoloured spots, mostly epiphyllous, shortly cylindrical, with torn white edges. Spores irregularly globose, finely echinulate, 18-20  $\mu$ .

This is said to represent the æcidiospores of *Puccinia obscura*, Schrot., the teleutospores of which occur on *Luzula*.

On *Bellis perennis*. Victoria.

- 1788. *Æcidium violæ*.** Schum. Sacc. Syll. 2163. See *Puccinia violæ*.

Spermogonia disposed in small or large heaps, crowded, honey-yellow; æcidia on all the green parts of the plant, in spots or patches, on yellowish blotches, pseudoperidia flattened, with a white, torn margin; æcidiospores warted, orange (16-24  $\times$  10-18  $\mu$ ).

On violets. Victoria.

- 1789. *Æcidium urticæ*.** Schum. Referred to *Puccinia caricis*. Sacc. Syll. 2196.

Spermogonia disposed in small or large heaps, honey-colour, sporules ellipsoid ( $4\frac{1}{2} \times 2 \mu$ ); æcidia disposed in a single or double series on yellowish or reddish spots, on leaves or stems; pseudoperidia cup-shaped, flattened, with a whitish margin, which is toothed and reflexed; æcidiospores polygonal, minutely warted (16-26  $\times$  12-20  $\mu$ ), orange.

On nettles, etc. Bacchus Marsh.

- 1790. *Æcidium senecionis*.** Desm. Ann. Sci. Nat. 1836, 244. (*Puccinia conglomerata*, Str. Sacc. Syll. 2313.)

Æcidia on brown spots, often marginate with black, disposed in clusters without definite order; pseudoperidia broad, flattened, whitish, margin irregularly torn, æcidiospores rounded, angular, 15-20  $\mu$  diam., almost even, orange.

On *Senecio*. N.S.Wales. Victoria.

#### GENUS 18. **RÆSTELIA.** Rebert.

Pseudoperidia elongated, commonly cylindrical or conical, soon fimbriate above; æcidiospores globose, continuous, brownish or orange, in chains.

- 1791. *Ræstelia polita*.** Berk. Linn. Journ. XIII., 174. Sacc. Syll. 2974.

Pseudoperidia ochraceous, at first obtuse, cylindrical, polished, even or delicately tomentose (scarcely 2 m.m. high), margin narrow, white, denticulate, composed of angular transversely striate cells; æcidiospores globose, 7-7 $\frac{1}{2}$   $\mu$  diam.

On *Muhlenbeckia Cunninghamii* and *Jacksonia scoparia*. Victoria. Queensland. (Fig. 270.)



GENUS 19. **UREDIO.** Pers.

Sori for the most part orange yellow, rather pulverulent, superficial, or erumpent; pseudoperidium none; uredospores solitary at the apex of simple pedicels.

**1792. Uredo angiosperma.** Thum. Myc. Austr. iv., 95. Sacc. Syll. 2998.

Sori on both surfaces, large, commonly disposed about a circle, covered by the splitting, torn and elevated epidermis, powdery, brown; uredospores oval or ellipsoid, rounded at the apex, somewhat narrowed at the base,  $45-30\ \mu$ , epispore even,  $5-7\ \mu$  thick, pale brownish, irregularly guttulate within.

On leaves of *Haekea*. W. Australia.

**1793. Uredo notabilis.** Ludwig. Bot. Centr. Blatt. (1890), p. 5.

Sori on the upper surface, large, red-brown, seated on a distorted, inflated tubercle (3 c.m.); uredospores elliptic, red-brown,  $36-43 \times 20-25\ \mu$ ; epispore thick, reticulate, on hyaline pedicels.

On phyllodes of *Acacia notabilis*. Victoria.

**1794. Uredo anguillarum.** Cooke Grev. xiv., 11. Sacc. Syll. 8000.

On both surfaces, sori gregarious, elliptic, bullate, a long time covered by the epidermis; uredospores globose, or globosely oval, even, brown; epispore thin,  $20-22 \times 20\ \mu$ , on short, deciduous, hyaline pedicels.

On leaves of *Anguillaria dioica*. Upper Macquarie River.

**1795. Uredo rhagodina.** Cke. & Mass. Grev. xv., 99. Sacc. Syll. 3101.

On the under surface; sori scattered, a long time covered, at length torn, brown, and girt by the remains of the epidermis; uredospores globosely ovate, even, yellowish,  $20 \times 15\ \mu$ .

On leaves of *Rhagodia Billardieri*. Victoria. (Fig. 271.)

**1796. Uredo spyridii.** Cke. & Mass. Grev. xv., 99. Sacc. Syll. 3111.

On the under surface; sori scattered, yellowish, pulverulent; uredospores subglobose, rough, pale yellow,  $20-25\ \mu$  diam.

On leaves of *Spyridium parvifolium*. Victoria.

**1797. Uredo antarctica.** Berk. Crypt. Antarc. (1845), 58, t. 68, f. 2 (not Spegazzini.)

On both surfaces, spots small, opposite, purple, paler beneath; sori bullate; uredospores obovate, or subglobose, even, with a central guttule, obsoletely pedicellate.

On *Luzula crinita*. Campbell Islands.

**1798. *Uredo leguminum.*** *Desm. Ann. Sci. Nat.* 1838, x., p. 310. *Crypt. Exs.* 234.

Pustules rounded, solitary, rather large, girt by the ruptured epidermis; uredospores ovoid, pedicellate, rough, pale brown ( $20 \times 18 \mu$ ).

On pods of *Acacia*. Queensland.

Perhaps the same as *Uredo phaseolorum*.

**1799. *Uredo cichoracearum.*** *DCand. Fl. Fr.* II., 229.

Spots obliterated, or very minute, sori on both surfaces, scattered, small, orbicular, rarely confluent, often girt by the remains of the ruptured epidermis; uredospores subglobose, or oblong, with short hyaline, deciduous pedicels.

On *Bidens pilosa*. Queensland.

**1800. *Uredo clematidis.*** *Berk. Hook. Journ. Bot. and Thumen. Myco. Univ.* 539. *Sacc. Syll.* 3139.

Sori on the under surface, solitary or gregarious, pale yellow, more or less rounded, flattened; spores irregular, ovoid, clavate, quadrangular, or polygonal, epispore thin, minutely granular, very pale yellowish, hyaline,  $24-28 \times 16-20 \mu$  (sometimes  $30 \times 25 \mu$ ).

On *Clematis aristata*. Queensland. Victoria. N. Zealand.

**1801. *Uredo armillata.*** *Ludw. Bot. Centr.* 1890, p. 6.

Sori red brown, confluent, surrounded by the ruptured epidermis; uredospores rounded, or elliptic, or pyriform, very spinulose, pale brown ( $23-30 \times 15-20 \mu$ ).

On *Juncus pallidus*. Victoria.

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## FUNGI IMPERFECTÆ.

6. **SPHÆROPSIDÆ.** *Lev.*

Fungi having a perithecium, but without asci; sporules (stylospores and spermatia of authors), produced within perithecia, on more or less manifest basidia.

*Family I.* **SPHÆRIOIDÆ.** *Sacc.*

Perithecia membranaceous, carbonaceous, or subcoriaceous, black (never fleshy, bright coloured), globose, conical, or lens-shaped, entire, immersed or superficial.

Section 1. **HYALOSPORÆ.****GENUS 1. PHYLOSTICTA.** *Pers.*

Perithecia covered by the epidermis, lenticular, thinly membranaceous, often pierced with a pore, punctiform, growing on decoloured spots on leaves, rarely on stems or branches; sporules small, ovoid or oblong, continuous, hyaline, basidia small or none.

**1802. Phyllosticta circumscissa.** *Cke. Grev. XI., 150. Sacc. Syll. 15.*

On both surfaces; spots orbicular, rufous brown, at length falling out and leaving round holes, perithecia few, minute, innate; sporules elliptic,  $8 \times 2 \mu$ .

On leaves of *Prunus armeniaca* and *Cerasus*. Queensland.

**1803. Phyllosticta Rosæ.** *Desm. Exs. 687. Sacc. Syll. 31.*

Epiphyllous. Perithecia very small, semi-immersed, black, globose, scattered on rather circular spots, at first greenish, then brownish, or greyish, with a purple border; sporules cylindrical, obtuse, with 3 or 4 nuclei, expelled in white tendrils.

On rose leaves. Victoria.

**1804. Phyllosticta ruborum.** *Sacc. Syll. 30.*

Epiphyllous; spots minute, whitish, often about the veins; perithecia few, punctiform, lens-shaped ( $\frac{1}{10}$  m.m. diam.); sporules attenuated, oblong ( $5 \times 1\frac{1}{2} \mu$ ), hyaline.

On leaves of *Rubus*. Victoria.

**1805. Phyllosticta eucalypti.** *Thum. Lusit. 374. Sacc. Syll. 33.*

Epiphyllous; perithecia gregarious, minute, punctiform, slightly emergent, shining, black, seated on large irregular spots, which are at first dingy brown, then whitish, girt by a narrow, purple border; sporules continuous, shortly ellipsoid ( $4 \times 1\frac{1}{2} \mu$ ), hyaline.

On leaves of *Eucalyptus*. Victoria.

**1806. *Phyllosticta phyllodiorum*.** *Sacc. Hedwigia* 1890, 156.

Spots somewhat circular, on both surfaces, whitish, with a brown margin; perithecia punctiform, pierced (90-100  $\mu$  diam.), substance sooty brown; sporules minute, rod-like, hyaline,  $4.5 \times 1 \mu$ .

On phyllodes of *Acacia*. Caromby.

**1807. *Phyllosticta hardenbergiæ*.** *Cke. & Mass. Grev.* XVI., p. 3.

Spots on both surfaces, various, tawny; perithecia for the most part on the under surface, very minute, gregarious, punctiform (60-80  $\mu$  diam.), black; sporules minute, subglobose, hyaline, 2-3  $\mu$  diam.

On living leaves of *Hardenbergia*. Victoria. (Fig. 272.)

**1808. *Phyllosticta soriformis*.** *Cke. & Mass. Grev.* XIX., 47.

Spots brown, orbicular, with a darker margin (2 m.m. diam.), on both surfaces; perithecia minute, aggregated in the centre of the spots, rather prominent, piercing the cuticle (resembling superficially some uredine); sporules elliptic ( $4.5 \times 2 \mu$ ), pale amber colour, hyaline.

On leaves of some *Proteaceæ*. Victoria.

**1809. *Phyllosticta platylobii*.** *C. & M. Grev.* XIX., 61.

Spots irregular on both surfaces, pallid, with a narrow brown margin; perithecia on the under surface, very minute, membranaceous, rather prominent, sporules minute, hyaline,  $3 \times 1 \mu$ .

On living leaves of *Platylobium*. Victoria.

**1810. *Phyllosticta neurospileæ*.** *Sacc. & Berl. Sacc.* Syll. 4235.

Spots on the upper surface, limited by the nerves, hence angular, reddish ochraceous; perithecia globose-depressed, very few, innate, rather prominent, punctiform; sporules ovate-oblong,  $8-10 \times 5-6 \mu$ , granulose within, hyaline, on short basidia.

On leaves of *Vitis antarctica*. Queensland.

**1811. *Phyllosticta papuensis*.** *Cke. Grev.* xv., 18. *Sacc.* Syll. 4253.

On the upper or both surfaces; perithecia gregarious, punctiform, semi-immersed, black, shining, pierced at the apex; sporules linear, straight, hyaline,  $10 \times 1 \mu$ .

On the leaves of shrubs. New Guinea.

**1812. *Phyllosticta fragaricola*.** *Desm. Pl. Crypt.* III., 686. *Sacc. Syll.* 219.

Spots straggling, becoming bleached, with a red margin; perithecia punctiform, remotely scattered; sporules oblong-ovoid,  $5 \times 1\frac{1}{2}-2 \mu$ , straight, without nuclei, hyaline.

On strawberry leaves. S. Australia.

**1813. *Phyllosticta cordylines.* Sacc. & Berl. Sacc. Syll. 4250.**

Spots vague, becoming pale; perithecia on the upper surface, close, punctiform, globose-depressed, pierced, 60-90  $\mu$  diam.; sporules oblong, biguttulate,  $4.5 \times 1 \mu$ .

On *Cordyline terminalis*. Queensland.

GENUS 2. **PHOMA.** Fr.

Perithecia under the cuticle, then erumpent, membranaceous, subcoriaceous, or rather carbonaceous, globose or compressed, smooth, without beaks; ostium minute or obsolete; sporules ovoid, fusoid, cylindrical, rarely sphaeroid, continuous, hyaline, mostly biguttulate, on filiform basidia, which are short and simple.

\* On Dicotyledons.

**1814. *Phoma ampelina.* B. & C. N. A. Fungi 380. Sacc. Syll. 467.**

Subcuticular, hysteriiform, swollen; sporules fusiform, 12  $\mu$  long.

On vine twigs ("Black spot"). Australia.

**1815. *Phoma rosarum.* Dr. & Mont. Alg. 604. Sacc. Syll. 451.**

Perithecia rather minute, innate, but somewhat prominent, covered by the entire or stellately split epidermis, dark brown, white within; sporules linear-oblong, hyaline, with a guttule towards each end.

On rose twigs. Queensland.

**1816. *Phoma notha.* Berk. Ann. Nat. Hist. No. 395. Sacc. Syll. 556.**

Perithecia spurious, orbicular, here and there elevated, sometimes with a tendency to become many-celled; sporules obovate, attenuated downwards.

On dead branches of *Platanus*. Queensland.

**1817. *Phoma Molleriana.* Thum. Sacc. Syll. III., 650.**

Perithecia on both surfaces, very numerous, large, densely gregarious, at first nestling beneath the epidermis, at length opening by a central pore, finally nearly free, concave, turgid, shining, dark chestnut; sporules cylindrical, simple, obtusely rounded at the ends, straight, hyaline,  $13-15 \times 3 \mu$ .

On fallen leaves of *Eucalyptus globulus*. Victoria.

**1818. *Phoma eucalyptidea.* Thum. Lus. 563. Sacc. Syll. 649.**

Perithecia on the under surface, scattered, conically elevated, at first covered, then rather prominent and erumpent, black, minute; sporules ellipsoid, hyaline, binucleate ( $5.9 \times 3\frac{1}{2}-5 \mu$ ), on short, flexuous basidia.

On leaves of *Eucalyptus*. Victoria.

**1819. *Phoma viminalis*.** *Cke. & Mass. Grev.* xvi., 75.

On the upper surface; perithecia immersed, erumpent, black, subglobose, pierced at the apex; sporules minute, continuous, ellipsoid, hyaline,  $3-4 \times 1\frac{1}{2}-2 \mu$ .

On leaves of *Eucalyptus viminalis*. Victoria.

**1820. *Phoma australis*.** *Cooke Grev.* xv., 17.

Epiphyllous, spots brownish, elliptical, girt by a brown line, at length confluent; perithecia black, punctiform, half-immersed; sporules elongated elliptic, hyaline, granulose ( $26-30 \times 6 \mu$ ), on short pedicels.

On leaves of *Eucalyptus*. Victoria. St. Arnaud.

**1821. *Phoma purpurea*.** *Cooke & Mass. Grev.* xv., 97.

On both surfaces; spots orbicular, purple; perithecia half-immersed, black, shining, at first covered, gregarious, somewhat circinating; sporules minute, elliptic, hyaline ( $4 \times 2 \mu$ ).

On coriaceous leaves. Queensland.

**1822. *Phoma daviesiae*.** *Cke. & Mass. Grev.* xviii., 7.

Chiefly on the under surface of leaves; perithecia very minute, covered, black, forming nebulous spots; conidia oval, profuse, hyaline,  $5 \times 3 \mu$ .

On dead leaves of *Daviesia latifolia*. Victoria.

**1823. *Phoma diploglottidis*.** *Cke. & Mass. Grev.* xvii., 56.

On the under surface, gregarious; perithecia semi-immersed, minute, black, papillate; sporules narrowly almond-shaped, binucleate, hyaline ( $10-11 \times 4-5 \mu$ ).

On fading leaves of *Diploglottis*. Queensland.

**1824. *Phoma lythri*.** *Cke. & Mass. Grev.* xvi., 75.

On the upper surface; perithecia scattered or gregarious, globose, covered, rather prominent, at length erumpent, pierced at the apex; sporules globose, continuous, hyaline,  $10 \mu$  diam.

On fading leaves of *Lythrum hyssopifolia*. Victoria.

**1825. *Phoma goodeniarum*.** *Cke. & Mass. Grev.* xvi., 2.

Epiphyllous, scattered; perithecia punctiform, minute, black, innate, membranaceous; sporules rather elliptic, binucleate, continuous, hyaline,  $8-10 \times 5 \mu$ .

On fading leaves of *Goodenia ovata*. Victoria.

**1826. *Phoma herbarum*.** *West Exs. No. 965. Sacc. Syll.* 793.

Perithecia gregarious, at first covered with the epidermis, depressedly globose, papillate, black; sporules ovoid, or ovoid-oblong, mostly biguttulate, hyaline,  $6-11 \times 3-4 \mu$ , on very short basidia.

On herbaceous stems. Victoria.

**1827. *Phoma plagia.*** *Cooke & Mass. Grev. xvii., 55.*

Spots determinate, glaucous, elliptic or confluent, margin circumscribed by a distinct line; perithecia very minute, black, emergent; sporules elliptic, binucleate, hyaline,  $8-9 \times 5 \mu$ .

On palm leaves. Queensland. (Fig. 273.)

**\*\* On Monocotyledons.**

**1828. *Phoma alliicola.*** *Sacc. Syll. iii., 940.*

Perithecia gregarious, epidermis falling away and then superficial, spherical, black, very small (scarcely  $130 \mu$  diam.), obtuse, pierced at the apex; sporules oblong, biguttulate,  $4-5 \times 2-2\frac{1}{2} \mu$ , hyaline.

On scapes of *Allium*. Victoria.

**1829. *Phoma cordyline.*** *Thum. Sacc. Syll. iii.*

Perithecia numerous, densely gregarious, on the under surface, a long time covered, pustular, then free, pierced at the apex with a central pore, quite black; sporules long, elliptic, rounded at the ends, nucleate or grumous, continuous, hyaline,  $13-15 \times 6-8 \mu$ ; basidia fasciculate, short, nearly straight, hyaline.

On dead leaves of *Cordyline australis*. Queensland.

**1830. *Phoma graminis.*** *West in Kickx. Fl. Fland. 441.*  
*Sacc. Syll. 998.*

Perithecia globose or angular, black, disposed in series, and forming elongated pustules, rugulose, dark-grey; ostiolum papillate; sporules ovoid, 1-2 guttulate, hyaline, expelled when moist in tendrils.

On grass culms. Queensland.

**1831. *Phoma nitida.*** *Rob. in Desm. Fl. Sacc. Syll. 997.*

Epiphyllous, scattered, minute, shining; perithecia hemispherical, white within, covered by the epidermis, which splits longitudinally; ostiola papillate; sporules rather ovoid,  $5 \mu$  long.

On grass. Victoria.

**\*\*\* On Acotyledons.**

**1832. *Phoma portentosa.*** *Cooke & Mass. Grev. xvi., 2.*

Scattered; perithecia innate, covered by the blackened cuticle, variable, papillate, black, shining; sporules cylindrical, obtuse at the ends, continuous, hyaline,  $8 \times 2 \mu$ .

On pileus of *Polyporus portentosus*. Victoria.

**GENUS 3. APOSPHÆRIA.** *Berk.*

Perithecia rather carbonaceous, superficial, or with the base buried in the matrix; sporules continuous, hyaline.

**1833. *Aposphæria leptospermi.*** *Cke. Grev. xix., 91.*

Perithecia scattered, erumpent, then superficial, minute, black, papillate, white within; sporules minute, oval, hyaline,  $3 \times 1 \mu$ .

On bark of *Leptospermum*. Victoria. (Fig. 365.)

GENUS 4. **ASTEROMELLA.** *Pass. & Thum.*

Perithecia globose, minute, often growing on leaves, disposed in dense black *asteroma*-like spots; sporules ovoid or rather cylindrical, hyaline, continuous.

**1834. Asteromella acaciæ.** *Cooke Grev. xix., 5.*

Perithecia very numerous, densely crowded and forming blackish spots; minute (scarcely exceeding  $25\ \mu$  diam.), black, membranaceous, pierced at the apex; sporules narrowly elliptical, continuous, hyaline, straight,  $2\frac{1}{2} \times 1\ \mu$ .

On phyllodes of *Acacia*. Victoria. (Fig. 274.)

**1835. Asteromella epitrema.** *Cooke Grev. xx., 6.*

Spots on the upper surface, black, somewhat orbicular or confluent, bearing a mycelium of brown jointed threads; perithecia minute, subglobose, membranaceous, seated on the mycelium; sporules numerous, somewhat fusiform, or narrowly elliptical, continuous, guttulate, hyaline,  $10-12 \times 3\ \mu$ .

On living leaves of *Trema aspera*. Queensland.

**1836. Asteromella homalanthi.** *Cke. & Mass.*

Spots suborbicular, on both surfaces, fuliginous (1 c.m. diam.), dotted with the minute, black, punctiform, superficial, membranaceous perithecia; sporules elliptic, hyaline,  $5 \times 3\ \mu$ .

On leaves of *Homalanthus populifolius*. Queensland.

GENUS 5. **CHÆTOPHOMA.** *Cooke.*

Perithecia membranaceous, minute, superficial, nestling amongst intricate hyphæ; sporules small, continuous, hyaline.

**1837. Chætophoma eutricha.** *Sacc. & Berl. Sacc. Syll. 4357.*

Mycelium epiphyllous, spots black, often confluent, threads of the mycelium effused, filiform, branched and anastomosing, bearing hemispherical lateral nodules, sooty-brown; perithecia punctiform, black, girt by the hyphæ, sporules oblong, allantoid, curved,  $4 \times 1\frac{1}{2}\ \mu$ , hyaline.

On leaves of *Castanospermum*. Queensland.

GENUS 6. **DOTHIORELLA.** *Sacc.*

Perithecia erumpent, aggregated in clusters on a basal stroma, or immersed in it; sporules ovoid or oblong, continuous, hyaline.

**1838. Dothiorella amygdali.** *Cke. & Mass. Grev. xix., 91.*

Perithecia innate, botryose, transversely erumpent, black, opaque, not papillate, rather gelatinous when moist; sporules elliptical, hyaline, granular within ( $22-25 \times 8-10\ \mu$ ), on rather thick basidia of equal length.

On bark of peach and almond. Victoria. (Fig. 363.)

**1839. Dothiorella pericarpica.** *Sacc. Pug. Austr. p. 15, fig. 5.*

Perithecia in erumpent clusters, black, pulvinate, tuberculose, unequal (scarce 1 m.m. broad), globose or angular, minute, paler



within ; sporules shortly fusoid, straight, rarely curved ( $5-6 \times 2 \mu$ ), hyaline, continuous; basidia arising from an ochraceous sporiferous base.

On pericarp of *Macrozamia*. Queensland.

GENUS 7. **CYTISPORA**. *Fries.*

Stroma covered or erumpent, internally cellular; sporules very copious, oblong, sausage-shaped, continuous, hyaline, when moist expelled in tendrils.

**1840. Cytispora xanthosperma.** *Fr. Syst. Myc.* II., 548.  
*Sacc. Syll.* 1531.

Conceptacles none, cells circinate, about a central column; asci covered, sporules evolved in golden tendrils, minute, curved, hyaline.

On *Salix Babylonica*. Victoria. (Fig. 364.)

**1841. Cytispora verrucula.** *Sacc. & Berl. Sacc. Syll. Addit.* 4374.

Stroma soon erumpent and almost superficial, globose or depressed, black, punctate with minute ostiola; perithecia few, immersed. Sporules sausage-shaped, hyaline ( $6 \times 1\frac{1}{2} \mu$ ), on long, branched basidia.

On branches. Queensland.

Section 2. **PHÆOSPORÆ.**

GENUS 8. **SPHÆROPSIS**. *Lev.*

Perithecia produced beneath the cuticle, erumpent, globose, papillate, between membranaceous and carbonaceous, black. Sporules ovoid or oblong, continuous, dingy brownish, on rod-like basidia.

**1842. Sphæropsis tricorynes.** *B. & Br. Linn. Trans.* II., 68. *Sacc. Syll.* 1720.

Perithecia minute, black, immersed in the parenchyma of the leaves; sporules elliptic,  $30 \mu$  long.

On *Tricoryne anceps*. Queensland.

**1843. Sphæropsis rosarum.** *Cooke & Ellis Grev. Sacc. Syll.* 1649.

Rather gregarious or scattered, perithecia covered, splitting the epidermis; sporules elliptical, with a single nucleus,  $25 \times 10 \mu$ .

On branches of *Rosa*. Queensland.

**1844. Sphæropsis numerosa.** *Cke. & M. Grev.* xx.

Gregarious, perithecia semi-immersed, or nearly superficial, globose, black, becoming flattened. Sporules elliptical, continuous, brown ( $15 \times 8 \mu$ ).

On dead bark. Victoria.

**1845. *Sphæropsis phomatoidea*. Cke. & Mass. Grev. XVIII., 49.**

Hypophyllous. Perithecia scattered over irregular brown spots, caused by some mining larvæ, convex, at first covered, black, pierced with a pore; sporules elliptic, rounded at the ends, nucleate, amber-brown ( $8 \times 4-5 \mu$ ), on rather short, curved basidia.

On *Eucalyptus* leaves. Victoria.

**1846. *Sphæropsis tritici*. Cke. & Mass. Grev. XVI., 75.**

Perithecia very minute, densely gregarious, at first covered, punctiform, black; sporules elliptic, continuous, bright brown,  $12 \times 7-9 \mu$ .

On dead leaves of wheat, and on the sheaths. Victoria. (Fig. 275.)

**GENUS 9. *CONIOTHYRIUM*. Corda.**

Perithecia subcuticular, erumpent, or almost superficial, globose or depressed, papillate, black. Sporules globose or ellipsoid, small, continuous, sooty-brown.

**1847. *Coniothyrium olivaceum*. Bon. Sacc. Syll. 1723.**

Perithecia scattered, at first covered, then erumpent, rather large, papillate. Sporules shortly elliptical, continuous, pale olive-brown,  $5 \times 3 \mu$ .

On involucres of *Leptospermum laevigatum*. Victoria.

**1848. *Coniothyrium septorioides*. Cke. & Mass. Grev. XX., 36.**

Epiphyllous. Spots orbicular, tawny, with a broad purple margin. Perithecia mostly in circles upon the spots, sometimes scattered, black, erumpent, globose, membranaceous. Sporules broadly elliptical, continuous, pale brown,  $5-6 \times 3-4 \mu$ .

On leaves of *Prostanthera lasiantha*. Victoria. (Fig. 366.)

**GENUS 10. *CAPNODIASTRUM*. Speg.**

Perithecia globose, olive, astomous, small, innate upon a helminthosporoid subiculum; sporules elliptic or ovoid, simple, brown.

**1849. *Capnodiastrum orbiculatum*. C. & M. Grev. XVIII., p. 49.**

Hypophyllous. Spots orbicular (3 m.m. diam.), consisting of black interwoven mycelium. Perithecia minute, globose, submembranaceous, seated on the mycelium. Sporules elliptical, brown, with a paler band across the centre,  $12 \times 4 \mu$ .

On coriaceous leaves. Queensland. (Fig. 276.)

**GENUS 11. *CHÆTOMELLA*. Fekl.**

Perithecia superficial, or very shortly pedicellate, everywhere sparingly setose; sporules cylindrical or subfusiform, a little curved, typically coloured.

**1850. *Chaetomella brachyspora*. Sacc. & Speg. Syll. 1807.**

Perithecia scattered, subsuperficial, globose, then depressed ( $\frac{1}{2}$  m.m. diam.), mouthless, black, everywhere clad with rigid setæ ( $100-150 \times 8-10 \mu$ ), brown, pale above and obtuse; sporules ovate-oblong, rounded at the ends ( $5-6 \times 3 \mu$ ), olive.

On bark. Victoria. (Fig. 367.)

## Section 3. PHÆODIDYMÆ.

GENUS 12. **DIPLODIA**. Fries.

Perithecia produced beneath the cuticle, erumpent, somewhat carbonaceous, black, typically papillate, pierced; sporules ellipsoid, ovoid, or oblong, uniseptate, brown, on simple, rod-like basidia.

**1851. *Diplodia lichenopsis*. Cke. & Mass. Grev. xvi., 2.**

Spots brick-red, determinate, at length pallid, or girt with a red zone, here and there confluent; perithecia semi-innate, punctiform, black; sporules elliptic, uniseptate, constricted in the middle, a little attenuated to each end, brown,  $20-25 \times 8-10 \mu$ , on sporophores of equal length.

On phyllodes of *Acacia complanata*. Queensland. (Fig. 277.)

**1852. *Diplodia phyllodiorum*. Penz. Sacc. Syll. 1990**

Perithecia gregarious, minute, subcuticular, then erumpent, black, globose, not depressed at the apex, seated on whitish, determinate spots; sporules uniseptate, elliptical or oval, not constricted at the septum, brown,  $8-10 \times 4-5 \mu$ .

On living or fading phyllodes of *Acacia*. Victoria.

**1853. *Diplodia canthifolia*. Cke. & Mass. Grev. xx., 36.**

Epiphyllous; perithecia scattered, immersed, membranaceous, dark brown, piercing the cuticle; sporules elliptical, for a long time continuous, then elongated and uniseptate, slightly constricted, brown ( $8 \times 5$ , then  $12 \times 5 \mu$ ).

On leaves of *Canthium latifolium*. Victoria.

## Section 4. HYALODIDYMÆ.

GENUS 13. **ASCOCHYTA**. Lib.

Perithecia for the most part innate on discoloured spots of leaves or branches, membranaceous, with a central pore, globose or depressed; sporules ovoid or oblong, uniseptate, hyaline.

**1854. *Ascochyta brunnea*. Cke. & Mass. Grev. xv., 98.**

Spots on both surfaces, orbicular or irregular, pale brown or ochraceous, girt by a darker elevated line; perithecia minute, punctiform, black, innate, at length emergent; sporules narrowly elliptic, uniseptate, hyaline,  $12 \times 4 \mu$ , on short basidia.

On leaflets of tree unknown (? *Sapindaceæ*). Queensland. (Fig. 278.)

**1855. Ascochyta apiospora.** *Cke. & Mass. Grev. xv., 98.*

Spots on the upper surface, orbicular or irregular, tawny, girt by a purple zone; perithecia minute, innate, with a small pierced ostium; sporules pear-shaped, unequally uniseptate, hyaline brownish, with the upper cell globose and broad, the lower cell minute and papillæform,  $12 \times 12 \mu$ .

On leaves of myrtle. Queensland.

GENUS 14. **ROBILLARDA.** *Sacc.*

Perithecia globose-depressed, covered by the epidermis, then pierced, membranaceous; sporules fusoid, uniseptate, hyaline, the apex crowned with long setæ.

**1856. Robillarda sessilis.** *Sacc. Syll. 2255.*

Spots small, angular, becoming whitish, encircled with red; perithecia on the upper surface, innate, covered by the epidermis, then cut round and lens-shaped; sporules sessile, oblong,  $9-11 \times 3\frac{1}{2} \mu$ , uniseptate, slightly constricted, pale olive, crowned at the apex with three hyaline hairs ( $14 \mu$  long).

On fading leaves. Queensland. (Fig. 279.)

GENUS 15. **ACTINONEMA.** *Fries.*

Perithecia minute, obtuse, somewhat superficial, without definite mouth, adnate by radiating dendritic fibrils to the surface of leaves; sporules typically oblong, hyaline, stipitate, uniseptate (or sometimes with more septa).

**1857. Actinonema rosæ.** *Lib. Fries S. V. Scan. 424. Sacc. Syll. 2257.*

On the upper surface; spots purplish, fibrils radiating from the centre, branches distinct, cobweb-like; perithecia-like tubercles scattered and collapsing, blackish; sporules oblong, constricted, uniseptate,  $18-20 \times 5 \mu$ , growing on rather short basidia.

On rose leaves. Victoria. Queensland. (Fig. 280.)

GENUS 16. **DIPLODINA.** *West.*

Perithecia covered by the cuticle or erumpent, globose, papillate, black, becoming smooth; sporules ellipsoid-oblong, uniseptate, hyaline.

**1858. Diplodina dendrobii.** *Cke. & Mass. Grev. xvi., 3.*

Epiphyllous; perithecia gregarious, innate, black, convex, at length splitting the cuticle, and naked above, shining; sporules uniseptate, elliptic, hyaline,  $20 \times 6-7 \mu$ .

On leaves of *Dendrobium speciosum*. Queensland. (Fig. 281.)

## Section 5. PHRAGMOSPORÆ.

GENUS 17. **HENDERSONIA.** *Berk.*

Perithecia covered by the cuticle, erumpent, or nearly superficial, globose, papillate, or depressed, membranaceous or rather carbonaceous, black; sporules oblong or fusoid, two or many septate, olive or sooty brown.

- 1859. *Hendersonia eucalypti*.** *C. & Hark. Grev.* 1881, 128.  
*Sacc. Syll.* 2320.

Perithecia collected in orbicular spots, immersed; sporules elliptic, attenuated below, somewhat clavate above, three septate, brown,  $20 \times 6 \mu$ , then erumpent, staining the matrix black.

On branches and leaves of *Eucalyptus*. Victoria. (Fig. 282.)

GENUS 18. **STAGONOSPORA.** *Sacc.*

Perithecia innate or erumpent; sporules ellipsoid or elongated, 2 or many septate, hyaline.

- 1860. *Stagonospora orbicularis*.** *Cooke Grev.* xx., 6.

Forming small orbicular pallid spots (5 m.m. diam.) on either surface, circumscribed by a brown line. Perithecia few (3 to 5) in the centre of the spots, covered by the cuticle, which is at length cracked, globose depressed, black. Sporules fusiform, acute at the ends, curved, 3-5 septate, constricted at the septa, hyaline,  $60-70 \times 8 \mu$ .

On dead leaves of *Eucalyptus*. Victoria. (Fig. 368.)

Section 6. **DICTYOSPORÆ.**

GENUS 19. **CAMAROSPORIUM.** *Schulz.*

Perithecia erumpent, simple, often papillate. Sporules ovoid-oblong or fusoid, 2 or many septate, muriform, coloured.

- 1861. *Camarosporium eucalypti*.** *Winter Rev. Myc.* 1888, 212. *Sacc. Syll. Add.* 4676.

Perithecia on irregular spots, which are pallid brown or grey, limited by a darker line (7 m.m. diam.). Epiphyllous, erumpent; sporules numerous, broadly ovoid or pear-shaped, transversely uni-septate, then longitudinally divided, brownish,  $12\frac{1}{2}-14 \times 7-9 \mu$ .

On leaves of *Eucalyptus*. Victoria. (Fig. 369.)

Section 7. **SCOLECOSPORÆ.**

GENUS 20. **SEPTORIA.** *Fries.*

Perithecia covered by the cuticle, seated on decoloured spots of leaves, globose or lenticular, pierced with a pore, membranaceous. Sporules rod-shaped or thread-like, many septate or with many guttules, hyaline.

- 1862. *Septoria violæ*.** *West. Sacc. Syll.* III., No. 2811.

Perithecia epiphyllous, minute, numerous, brownish-yellow, membranaceous, seated on pallid, zoned, orbicular spots, girt by a rufous-brown ring; sporules filiform, straight or flexuous, obsoletely guttulate, hyaline.

On fading violet leaves. Victoria.

- 1863. *Septoria Martinii*.** *Cooke Grev.* XIX., 5.

Spots on the upper surface, grey, confluent, circumscribed by a black line; perithecia punctiform, globose, depressed, membranaceous, pierced at the apex; sporules cylindrical, curved or flexuous,  $20-40 \times 3 \mu$ , with many nuclei, at length 3-5 septate, hyaline.

On leaves of *Senecio Bedfordii*. Victoria. Bass River. (Fig. 283.)

**1864. *Septoria oleandrina*.** *Sacc. Fungi Ven.* v., 205.

Spots on the upper surface, rounded or angular and confluent, growing whitish; perithecia rather remote, somewhat large (140-150  $\mu$  diam.), globose, pierced with a broad pore, substance fuliginous; sporules filiform, of unequal length, often curved, or clavate,  $15-25 \times 1\frac{1}{2}-2 \mu$ , obsoletely septate, hyaline.

On leaves of *Nerium oleander*. Queensland.

**1865. *Septoria myoporii*.** *Cke. & Mass. Grev.* xvi., 113.

On the upper surface. Spots orbicular, whitish, girt by a brown line. Perithecia semi-immersed, punctiform, black; sporules linear, flexuous, guttulate,  $40-50 \times 2 \mu$ .

On leaves of *Myoporum insulare*. Victoria.

**1866. *Septoria hardenbergiae*.** *Sacc. Hedwigia* 1890, 156.

Spots on both surfaces, broad, pallid, margined with brown; perithecia punctiform, pierced (90-100  $\mu$ ), substance honey-coloured, ochre; sporules fusoid-falcate, biguttulate ( $15-18 \times 1\frac{1}{2} \mu$ ), hyaline.

On leaves of *Hardenbergia monophylla*. Norwood.

**1867. *Septoria phyllodiorum*.** *Cke. & Mass. Grev.* (1890), xix., 47.

Perithecia densely gregarious, on both surfaces, without definite spots, often occupying the whole surface, immersed, covered by the cuticle, globose-depressed, black, pierced at the apex. Sporules cylindrical, obtuse at the ends, multinucleate, then  $3-5$  septate, hyaline,  $40 \times 3 \mu$ .

On phyllodes of *Acacia longifolia*. Victoria.

**1868. *Septoria epiphyllodea*,** substituted for *Septoria phyllodiorum*, *Sacc. Hedwigia* 1890, 156, not of *Cooke & Mass.*

Spots on both surfaces, circular, whitish, encircled by brown; perithecia crowded, punctiform, pierced (130-140  $\mu$  diam.), becoming black; sporules narrowly fusoid, acute at the ends ( $15-16 \times 2 \mu$ ), uniseptate, hyaline.

On phyllodes of *Acacia*. Victoria.

**1869. *Septoria lepidospermi*.** *Cke. & Mass. Grev.* xix., 91.

On both surfaces, spots greyish, then white, oblong, with a broad brown margin. Perithecia small, semi-immersed, black, seated on the spots. Sporules linear, flexuous, hyaline,  $30 \times 1 \mu$ .

On leaves of *Lepidosperma*. Victoria.

**1870. *Septoria bromi*.** *Sacc. Syll.* 3051.

Spots obsolete, growing pale, elongated; perithecia copious, globose-flattened, and pierced; sporules thread-like, a little clavate, hence acute at one end and obtuse at the other,  $50-60 \times 2 \mu$ , slightly curved, with numerous minute guttules, hyaline.

On leaves of *Bromus*, etc. Victoria.

GENUS 21. **PHLYCTENA.** *Mont. & Desm.*

Perithecia covered by the cuticle, sometimes erumpent, globosely oblong, dehiscing somewhat after the manner of *Hysterium*, almost incomplete; sporules fusoid, elongated, or filiform, continuous, hyaline, produced on basidia.

**1871. Phlyctena passifloræ.** *C. & Mass. Grev. xvi., 3.*

Caulicolous; perithecia very densely gregarious, minute, innate, at length erumpent, incomplete above; sporules filiform, uncinatè,  $35 \times 1 \mu$ .

On twigs of *Passiflora*. Queensland. (Fig. 284.)

GENUS 22. **GAMOSPORA.** *Sacc.*

Perithecia almost superficial, globose, minute, with scarcely any opening, membranous, clothed with divergent dark bristles; sporules many septate, in the form of rods, usually in threes, terminating a common sporophore, these sporophores again ternately branched, on the end of short rod-like basidia.

**1872. Gamospora eriosporoides.** *Sacc. & Berl. Sacc. Syll. 4555.*

Perithecia on the upper surface, interspersed on the thin spot-like brown mycelium, punctiform, globose-depressed, sparingly clad with cuspidate, sooty-brown, septate setæ; sporules rod-like, straight, obtuse,  $50-60 \times 7 \mu$ , 3-4 septate, at the apex of ternate sterigmata.

On leaves. Queensland.

Family II. **NECTRIOIDÆ.** *Sacc.*

Perithecia and stroma (when present) rather fleshy or waxy, brightly coloured (white, yellow, red, or orange), globose, or rarely elongated, or somewhat cup-shaped; sporules various, mostly hyaline.

Sub-coh. 1. **ZYTHIÆ.** *Perithecia sub-globose, sphaeriæ-form.*GENUS 23. **SPHÆRONEMELLA.** *Karst.*

Perithecia subsphaeroid, membranaceous, very thin, soft, bright coloured, hard when dry, horny, superficial, smooth, with a beaked ostium; sporules ellipsoid, continuous, hyaline, sometimes appendiculate, and often oozing from the apex of the beak in a globule.

**1873. Sphaeronemella rufa.** *Sacc. Syll. III., p. 618. = Sphaeronema rufum. Fr. Act. Holm. 1818, 357.*

Perithecia subulate, acute, rufous, paler downwards, limpid, globule paler; sporules very small, globose, basidia fasciculate,  $25 \mu$  long.

On pine chips. Tasmania. (Fig. 370.)

GENUS 24. **ASCHERSONIA.** *Mont.*

Stroma fleshy, hemispherical, turbinate or pulvinate, bright coloured, at first covered with a fugacious byssoid veil of the same colour; perithecia (or cells) immersed in the stroma, membranaceous, very thin, opening by a pore; basidia filiform; sporules fusiform, hyaline, continuous, guttulate, or spuriously septate.

**1874. Aschersonia tahitensis.** *Mont. Cent. VI., p. 122, t. 6, f. 3. Sacc. Syll. 3313.*

Stroma hemispherical, truncate, obtuse, yellow, 1-2 m.m. diam.; perithecia minute,  $\frac{1}{3}$  m.m. diam.; sporules minute, fusoid, acute at the ends,  $15 \times 2 \mu$ , 4 guttulate, hyaline, on filiform basidia, 20-25  $\mu$ .

On leaves of climber. Queensland. (Fig. 285.)

GENUS 25. **POLYSTIGMINA.** *Sacc. Syll. III., 622.*

Stroma on leaves, subdiscoïd, convexo-plane, fleshy, reddish, many-celled.

Sub-Genus. **MARTINELLA.** *Conidia subsphæroid or elliptic, continuous, coloured.*

**1875. Polystigmina (Martinella) eucalypti.** *Cke. & Mass. Grev. XVIII., 7.*

On the upper surface; stroma rather orbicular, fleshy, somewhat plane, reddish-brown; perithecia very minute, immersed, darker, cracked at the mouth; sporules roundish-oval, continuous, bright brown,  $6 \times 4 \mu$ .

On leaves of *Eucalyptus*. Victoria. (Fig. 286.)

*Family III.* **LEPTOSTROMACEÆ.**

Perithecia more or less distinctly dimidiate, scutiform, without mouth, or with an ostiolum, or splitting like a *Hysterium*, membranaceous, or carbonaceous, black, erumpent, or superficial.

GENUS 26. **LEPTOTHYRIUM.** *Kunze.*

Perithecia dimidiate, scutiform, between carbonaceous and membranaceous, black, without mouth, or gaping, then cut round, substance mostly cellulose and radiating, nevertheless spurious, and formed from the changed epidermis; sporules ovoid-oblong or fusoid, continuous, hyaline.

**1876. Leptothyrium eucalyptarum.** *C. & M. Grev. XVIII., 7.*

Perithecia scattered over bleached spots; scutiform, flattened, black, angular, triangular, or rather quadrate, dehiscing in the middle with a stellate fissure; sporules ovoid, continuous, hyaline,  $4 \times 8 \mu$ .

On fallen leaves of *Eucalyptus*. Victoria. (Fig. 287.)



**1877. *Leptothyrium aristatum*. Cooke Grev. xx., 6.**

Perithecia scattered, superficial, scutate, orbicular, submembranaceous, radiately cellular, dark-brown ( $\frac{1}{10}$  m.m.); sporules cylindrical, strongly curved, obtuse at the ends, with an oblique hyaline bristle at one end, equal in length to the sporule, hyaline,  $14-15 \times 2-3 \mu$ .

On dead leaves of *Eucalyptus*. Victoria.

**GENUS 27. *PIGGOTIA*. B. & Br.**

Perithecia flattened, unequal, thin, at first covered by the cuticle; sporules oblong, continuous, hyaline.

**1878. *Piggotia substellata*. Cooke Grev. xx., 6.**

On the under surface, forming small, somewhat orbicular, stellate black patches (1-2 m.m. diam.), composed of the confluent, flattened perithecia, which are sometimes distinct, seated on rather larger tawny spots; sporules cylindrical, straight, obtuse at the ends ( $8 \times 1 \mu$ ), hyaline, on longer simple basidia.

On leaves of *Eucalyptus*. Victoria. (Fig. 371.)

**GENUS 28. *MELASMIA*. Lev.**

Perithecia dimidiate, plane, almost without a mouth, or cracking, membranaceous, black, innate in a blackened, effused stroma, often on leaves; sporules elongated, continuous, subhyaline.

**1879. *Melasmia eucalypti*. Cke. & Mass. Grev. xvi., p. 75.**

Spots orbicular or confluent (2 m.m. diam.), black; perithecia few, somewhat gregarious, elliptical, or lanceolate, dehiscing by a fissure, then hysterior-like; sporules lanceolate, acute at each end, continuous, hyaline ( $15 \times 5 \mu$ ), on rather long, simple basidia.

On dead leaves of *Eucalyptus*. Victoria. Queensland. (Fig. 288.)

**GENUS 29. *ACTINOTHECIUM*. Ces.**

Perithecia at first orbicular or angular, scutate, dehiscing by radiating fissures, rays longitudinally narrowly cracked; sporules ovate-long, continuous.

**1879 bis. *Actinothecium ? scortechinii*. Sacc. & Berl. Sacc. Syll. 3398.**

Perithecia linear, straight, or curved, subsuperficial, furcate or variedly branched, plano-convex, longitudinally sulcate, spores unequal, here and there open; fructification unknown.

On leaves of *Smilax*. Queensland.

**GENUS 30. *SACIDIUM*. Nees.**

Perithecia dimidiate, clypeate, without mouth, black, membranaceous; sporules globose or ellipsoid, hyaline, or pale coloured.

**1880. *Sacidium eucalypti*. Cke. & Mass. Grev. xvi., 75.**

On both surfaces; perithecia gregarious, erumpent, small, flattened, black, soon deficient above; sporules globose, continuous, hyaline,  $5-6 \mu$  diam.

On dead leaves of *Eucalyptus globulus*. Victoria.

**1881. *Sacidium camelliae*. Cke. & Mass. Grev. xvi., 3.**

Perithecia scattered, superficial, dimidiate, black, opaque, variable in size, for the most part minute; sporules subglobose, continuous, pale tawny,  $10 \times 8 \mu$ .

On fading leaves of *Camellia*. Victoria. (Fig. 289.)

**GENUS 31. MELOPHIA. Sacc.**

Perithecia flattened, rather convex, dimidiate, rather soft, black or glaucous brown, at length corrugated, astomous or dehiscing irregularly; sporules elongated, flexuous, continuous, hyaline.

**1882. *Melophia Woodsiana*. Sacc. & Berl. Sacc. Syll. 3512.**

Perithecia remotely scattered, epiphyllous, inserted in a thin, white filamentose, spot-like subiculum, soon falling away, scutate, glaucous brown,  $\frac{1}{2}$ - $\frac{1}{4}$  m.m., texture thinly membranaceous, olive brown; sporules cylindrical, obtuse,  $30-35 \times 1\frac{1}{2}$ , narrowly convolute, or circular, or horse-shoe shape, multiguttulate, hyaline.

On phyllodes of *Acacia harpophylla*. Queensland.

**1883. *Melophia leptospermi*. Cooke. = *Melophia phyllochoroides*. Cooke Grev. xix., 91. nec. Speg.**

Perithecia scattered on both surfaces, convex, flattened at the base, and scutate, black ( $\frac{1}{2}$ -1 m.m. diam.), white within, even, smooth; sporules thread-like, curved or flexuous, hyaline,  $25 \mu$  long.

On leaves of *Leptospermum laevigatum*. Victoria. (Fig. 372.)

**GENUS 32. LEPTOSTROMELLA. Sacc.**

Perithecia covered, then subsuperficial, elongated, depressed, convex, rather carbonaceous, opening by a more or less manifest longitudinal crack; sporules rod-like or thread-like, hyaline.

**1884. *Leptostromella eucalypti*. Cke. & Mass. Grev. xix., 91.**

Spots suborbicular, on both surfaces, red brown, then fuliginous; perithecia scattered over the spots, minute, subglobose, then elongated, black, dehiscing by an elongated fissure; sporules thread-like, straight or flexuous,  $20 \mu$  long.

On fading leaves of *Eucalyptus*. Victoria. (Fig. 373.)

**Family IV. EXCIPULACEÆ. Sacc.**

Perithecia cup-shaped, or saucer-shaped, or resembling *Hysterium*, at first somewhat sphaeroid, but soon broadly open, membranaceous or carbonaceous, black, erumpent or superficial, smooth or hairy.

**Section 1. HYALOSPORÆ.****GENUS 33. DINEMASPORIUM. Lev.**

Perithecia cup-shaped, superficial, black, furnished with rigid, brown bristles; sporules oblong or sausage-shaped, continuous, hyaline, with a hair at each end; basidia thread-like.

**1885. *Dinemasporium hispidulum*. Schrad. Sacc. Syll. 3619.**

Perithecia gregarious or scattered, rather large, cup-shaped, black, setæ long, rigid, straight; disc becoming glaucous; sporules

elongated, fusiform, curved ( $14-18 \times 2 \mu$ ), with 3-4 guttules, and a short, oblique bristle at each end.

On wood. W. Australia. (Fig. 290.)

GENUS 34. **PROTOSTEGIA.** Cke.

At first covered, then naked, discoid, margin torn, toothed, or fringed, disc gelatinous; sporules thread-like, continuous, pedicellate, then free.

**1886. Protostegia eucalypti.** Cke. & Mass. Grev. xvi., 75.

Epiphyllous. Receptacles immersed, cup-shaped, gelatinous, orange coloured, covered by the epidermis, which is at length split open; sporules obclavate, sigmoid or curved, elongated, hyaline, continuous,  $60-90 \times 3 \mu$ , on very short sporophores.

On dead leaves of *Eucalyptus incrassatus*. Victoria. (Fig. 291.)

Family V. **MELANCONIÆ.** Berk.

Fungi without perithecia or asci; pustules produced beneath the cuticle, at length partly erumpent, often soft, dusky, grey, or brightly coloured; conidia evolved from a proligerous stratum.

GENUS 35. **GLÆOSPORIUM.** Mont.

Pustules nestling beneath the epidermis, discoid or pulvinate, at length sometimes erumpent, pale or brown; conidia ovate-oblong, rarely oblong, continuous, hyaline, often conglomerate and erumpent in a globule or tendril; basidia thread-like, fasciculate.

\* On twigs.

**1887. Glæosporium citri.** Cke. & Mass. Grev. xix., 92.

Gregarious, erumpent, pale fuliginous; pustules rather small, often confluent, cuticle splitting irregularly above; conidia obtusely fusiform on short sporophores, at first nucleate or granular, hyaline,  $20 \times 5-6 \mu$ .

On branches of lemon. Victoria.

\*\* On leaves.

**1888. Glæosporium intermedium.** Sacc. F. Ital. 1048.  
Sacc. Syll. 3675.

Pustules gregarious, punctiform, black, then erumpent ( $\frac{1}{8}-\frac{1}{6}$  m.m. diam.); conidia elongated, rounded at the ends, straight, hyaline ( $14-18 \times 4-6 \mu$ ).

On leaves of *Hoya australis*. Queensland.

**1889. Glæosporium citricolum.** Cke. & Mass. Grev. xvi., 3.

Spots dark brown, small, rather discoid, often confluent; pustules immersed; conidia oval, continuous, hyaline,  $8 \times 6 \mu$ .

On orange leaves. Queensland.

**1890. Glæosporium subglobosum.** Cke. & Mass. Grev. xv.,  
p. 3.

Epiphyllous; pustules scattered, pallid, inconspicuous, basidia short, conidia subglobose, erumpent in a gelatinous mass,  $10 \times 8 \mu$ .

On fading leaves of *Goodenia ovata*. Victoria.

**1891. *Glœosporium glaucum*. Cke. & Mass. Grev. xvi., 75.**

Spots rather orbicular, on one or both surfaces, becoming glaucous, rather mealy, pustules minute, conidia profuse, soon oozing out, forming an effused mealy stratum, globose, hyaline, 6-7  $\mu$  diam.

On living leaves. Queensland.

**1892. *Glœosporium hedycaryi*. Cke. & Mass. Grev. xviii., 7.**

On the upper surface; spots orbicular, turning black; pustules solitary or gregarious; conidia oblong, rounded at each end, granular, hyaline,  $18 \times 4 \mu$ .

On fading leaves of *Hedycarya Cunninghamii*. Victoria. (Fig. 292.)

**1893. *Glœosporium nigricans*. Cke. & Mass. Grev. xix., 91.**

Without distinct spots, on both surfaces; pustules densely aggregated, becoming black, convex, at length pierced; conidia oval, hyaline,  $12 \times 7 \mu$ .

On leaves of *Eucalyptus pauciflora*. Australian Alps.

**1894. *Glœosporium epicladii*. Cke. & Mass. Grev. xix., 92.**

Pustules gregarious, in the centre of irregular spots, caused by the blackened cuticle, with a central pallid pore, through which the contents emerge in an orange subgelatinous mass; conidia fusiform, obtuse, hyaline ( $22-25 \times 9-10 \mu$ ), with granular contents.

On *Cladium tetraquetrum*. Port Phillip.

**1895. *Glœosporium Denisonii*. Sacc. & Berl. Sacc. Syll. 4593.**

Pustules gregarious, minutely pustulate, covered by the scarcely perforate epidermis, yellowish within; conidia oblong-cylindrical, obtuse, slightly curved,  $6-8 \times 1-5 \mu$ , hyaline; basidia simple, rod-like.

On leaves of *Macrozamia Denisonii*. Queensland.

\* \* \* On fruits.

**1896. *Glœosporium Lindemuthianum*. Sacc. & Magn. Sacc. Syll. 3747.**

Spots on the fruit, rarely on the stem or leaves, roundish, bleached, at first with a rufous margin; pustules dirty white, in the middle of the spots, inflating the cuticle, and then erumpent; conidia oblong, straight or curved ( $15-19 \times 3\frac{1}{2}-5\frac{1}{2} \mu$ ), granular within, hyaline.

On legumes of bean, etc. Victoria.

**1897. *Glœosporium leguminis*. Cke. & Hark. Grev. 1880, 7. Sacc. Syll. 3749.**

Scattered, covered by the cuticle; conidia oval, hyaline, flowing out in a gelatinous mass ( $12 \times 6 \mu$ ).

On legumes of *Acacia melanoxylon*. Victoria.

**1898. *Glœosporium fructigenum*. Berk. Gard. Chron. 1856.  
Sacc. Syll. 3751.**

Pustules concentric, dull rose colour, erumpent, with a single pore or a fringed mouth, pulvinate; conidia oblong or cylindrical, often curved,  $20-30 \times 5-6 \mu$ , granular, hyaline; basidia simple, rarely forked.

On rotting pears. Queensland.

**1899. *Glœosporium musarum*. Cooke & Mass. Grev. xvi., 3.**

Pustules innate-erumpent, gregarious, rather rosy. Conidia, elongated, ellipsoid, rounded at the ends, continuous, hyaline,  $10-12 \times 4 \mu$ , granular within.

On ripe bananas. Queensland.

**1900. *Glœosporium ampelophagum*. Pass. Sacc. Syll. 3755.**

Spots rather circular, often confluent, occupying the surface of the berries, rufous or dingy, turning black, in the centre grey, or rosy-pruinose, pustules nestling beneath the epidermis, minute, densely gregarious; conidia oblong, ellipsoid, or ovoid,  $5-6 \times 2\frac{1}{2}-3\frac{1}{2} \mu$ , biguttulate, hyaline.

On grapes, rarely on vine leaves or branches. Victoria.

**1901. *Glœosporium pestiferum*. Cke. & Mass. Grev. xix., 61.**

Pustules gregarious, subcuticular, small, discoid, convex, rosy. Conidia oozing out and forming pink nodules resembling a small *Tubercularia*, cylindrical, rounded at the ends, straight, continuous, granular within, hyaline,  $14-15 \times 3-4 \mu$ .

On twigs, peduncles, and fruit of *Vitis vinifera*. Victoria. Queensland.

**1902. *Glœosporium lagenarium*. Pass. Sacc. Syll. 3757.**

Pustules seated beneath the cuticle, erumpent, often circinating, minute, pulvinate, somewhat rosy; conidia ovate-oblong, sometimes unequal-sided,  $16-18 \times 5-6 \mu$ , continuous, cloudy, hyaline; basidia fasciculate, rather fusoid,  $15-20 \times 3-5 \mu$ .

On the epicarp of melons, etc. Queensland.

**1903. *Glœosporium cucurbitarum*. B. & Br. Linn. Trans. ii., p. 68. Sacc. Syll. 3758.**

Spots bright orange, depressed, conidia clavate, shortly stipitate,  $10-22 \mu$  long.

On gourds. Queensland.

Scarce more than a variety of *Glagenarium*.

GENUS 36. **PESTALOZZIELLA**. Sacc. & Ell.

Pustules growing beneath the cuticle, without perithecia. Conidia oblong, continuous, somewhat hyaline, crowned at the apex with hyaline setæ.

**1904. *Pestalozziella circulare*. Cke. & Mass. Grev. xviii., 80.**

Developed on both surfaces of the leaves. Pseudo-perithecia usually disposed in circles, a little convex, and at length splitting

irregularly, at first brown, then nearly black and shining, resembling *Phyllachora*. Conidia cylindrically elliptical,  $30-34 \times 8-10 \mu$ , hyaline, continuous, granular, crowned by a single hyaline bristle; base with a short, thick peduncle, and usually 3 or 4 divergent hyaline hairs at the base of the spore.

On dead leaves of *Eucalyptus parviflora*. Victoria. (Fig. 293.)

### GENUS 37. **MARSONIA.** Fisch.

Pustules always, or for a long time, covered by the cuticle of the leaves, globose, discoid, pallid. Conidia uniseptate, hyaline.

#### **1905. Marsonia acaciæ.** Cke. & Mass. Grev. xix., 47.

Spots irregular, or confluent, pallid or whitish, with a brown margin ( $\frac{1}{2}$ -1 c.m. long). Pustules gregarious on the spots, at length splitting the cuticle irregularly, and ejecting the conidia in tendrils. Conidia cylindrical, rounded at the end, arcuate or sigmoid, or flexuous, uniseptate,  $40 \times 8 \mu$ , hyaline, pale brownish, with granular contents.

On phyllodes of *Acacia*. Victoria.

#### **1906. Marsonia deformans.** Cke. & Mass. Grev. xix., 62.

Epiphyllous. Pustules gregarious, often confluent, brown, distorting the foliage, convex or flattened, sometimes on large indeterminate discoloured spots. Conidia oblong, uniseptate, constricted at the septum, hyaline,  $15-16 \times 5 \mu$ .

On cultivated peas, chiefly on the leaves, stipules, petioles, etc. Victoria. (Fig. 374.)

### GENUS 38. **STILBOSPORA.** Pers.

Pustules subcutaneous, conical, or discoid. Conidia oblong or fusoid, 2 or many-septate, coloured.

#### **1907. Stilbospora foliorum.** Cooke Grev. xx., 6.

Epiphyllous. Pustules in orbicular paler spots, splitting the cuticle with three or four orifices, through which the sporules escape. Stroma flattened, conidia broadly elliptical, a little narrowed towards each extremity, three septate, not constricted, olive-brown, becoming nearly opaque ( $22 \times 8-9 \mu$ ).

On dead leaves of *Eucalyptus*. Victoria. (Fig. 376.)

### GENUS 39. **CORYNEUM.** Nees.

Pustules discoid or pulvinate, subcutaneous, erumpent, black, compact; conidia oblong or fusoid, two or many septate, coloured.

#### **1908. Coryneum viminalis.** Cke. & Mass. Grev. xx., 36.

Pustules punctiform, flattened, scattered, black; not seated on definite spots. Conidia obovate, or pyriform, 1-2 septate, not constricted ( $8-10 \times 5-6 \mu$ ), pale purple brown, on rather long, filiform sporophores.

On leaves of *Eucalyptus viminalis*. Victoria. (Fig. 375.)

GENUS 40. **HYALOCERAS.** *DR. & M.*

Pustules convex, erumpent, minute, black. Conidia oblong, 2 or many septate, sooty-brown, rostrate at both ends.

**1909. Hyaloceras dilophospora.** *Cke. Grev. xix., 5.*

Epiphyllous. Pustules gregarious, minute, brown, erumpent, convex, rather angular, splitting irregularly in the centre, stroma rather gelatinous; conidia elongated, somewhat fusoid ( $25 \times 4 \mu$ ), slightly curved, triseptate, not constricted, pale brown, with two divergent setæ at each extremity.

On leaves of *Leptospermum scoparium*. Victoria. (Fig. 294.)

GENUS 41. **PESTALOZZIA.** *DeNot.*

Pustules growing beneath the cuticle, afterwards erumpent, disc-shaped, or pulvinate, black. Conidia oblong, 2 or many septate, coloured (at least, the middle cells), very rarely wholly hyaline, crested with one or more hyaline hairs, seated on hyaline, slender basidia.

**1910. Pestalozzia uvicola.** *Speg. Sacc. Syll. 4128.*

Pustules globose, then lenticular, now and then conoid, black, seated beneath the cuticle, erumpent, and encircled by the remains of the torn epidermis ( $300-400 \mu$ ). Conidia fusiform, 5-celled, the three median cells pale olive-brown, terminal cells hyaline,  $35 \times 8-10 \mu$ , with three cilia,  $8-10 \times 1 \mu$ , basidia  $25-30 \times 1 \mu$ .

On grapes. Queensland.

**1911. Pestalozzia acaciæ.** *Thum. Lusit. 576. Sacc. Syll. 4110.*

Hypophyllous. Pustules gregarious or solitary, hemispherical, erumpent, seated on irregular, dirty-ochre spots, with a broad rust-coloured margin. Conidia mostly straight, fusoid, 5 septate, three middle cells coloured ( $24 \times 9-10 \mu$ ), crested with two or three nearly straight hairs.

On living *Acacia* leaves. Victoria.

**1912. Pestalozzia versicolor.** *Speg. Sacc. Syll. 4134.*

Pustules sublenticular, at first under the epidermis, then erumpent, with the surrounding matrix blackened by the exuding spores. Conidia fusoid, 4-septate, two middle cells sooty-brown ( $30-32 \times 10-12 \mu$ ), crested with three or four setæ ( $30-33 \mu$  long).

On leaves of *Cupania anacardioides*. Queensland.

**1913. Pestalozzia funerea.** *Desm. Ann. Sci. Nat. 1843, 235. Sacc. Syll. 4135.*

Pustules scattered, punctiform, black, covered by the epidermis, then bursting through, stroma depressed, whitish; conidia oblong-fusoid, 5-celled, a little constricted, three central cells brown, the others hyaline ( $22-32 \times 6-8 \mu$ ), crested with 2-5 spreading, recurved hyaline setæ ( $10-15 \times 1 \mu$ ).

On leaves of *Elæodendron* and *Myrtus*. Queensland.

**1914. *Pestalozzia casuarinæ*.** *Cke. & Mass. Grev. XVIII., p. 114.*

Pustules gregarious, minute, elliptic, encircled by the ruptured epidermis; conidia fusiform, four-celled, the two central brown ( $10-12 \times 6-7 \mu$ ), the terminal cells hyaline, the upper cell conoid, crowned by three divergent hyaline setæ (with conidia  $45-50 \mu$  long), basidia hyaline, thickened above.

On branches of *Casuarina*. Victoria. (Fig. 295.)

**1915. *Pestalozzia monochæta*.** *Desm. 1848, 355. Sacc. Syll. 4161.*

Pustules scattered or gregarious, often on the under surface; occupying variable spots, becoming stained with black; conidia fusoid, four-celled ( $10 \times 4 \mu$ ), the two central brown, the two terminal hyaline, with a single apical spine,  $5-6 \mu$  long, on hyaline pedicels.

On *Eucalyptus*. Queensland.

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7. **HYPHOMYCETÆ.**

Fungi superficial or nearly so, rarely parasitic on insects. Hyphæ more or less developed, bearing free spores or conidia. Asci and perithecia wanting.

*Family I.* **MUCEDINÆ.**

Fungi byssoid, pale or brightly coloured (rarely brownish). Hyphæ lax (not cohæring in fascicles).

Section 1. **AMEROSPORÆ.** *Sacc.*

Conidia varying between spherical and shortly cylindrical, continuous, hyaline or brightly coloured.

Sub-Section 1. **Micronemæ.**

*Hyphæ very short, or scarcely distinct from the conidia.*

GENUS 1. **OOSPORA.** *Wallr.*

Tufts effused or pulvinate, mould-like, lax or rather compact; fertile threads short, and nearly simple, fragile. Conidia regularly produced in chains, globose or ovoid, hyaline or brightly coloured.

**1916. Oospora aphides.** *Cke. & Mass. Grev. xvi., 76.*

Threads short, continuous, somewhat cæspitose, hyaline; conidia in chains, lemon-shaped, apiculate at each end, at first nucleate, hyaline, white,  $17-19 \times 12 \mu$ .

On Aphides upon pumpkin leaves. Queensland. (Fig. 296.)

GENUS 2. **OIDIUM.** *Link.*

Sterile threads decumbent, sporophores erect, nearly simple. Conidia ovoid, produced in chains, soon free, rather large, hyaline or pallid.

**1917. Oidium erysiphoides.** *Fr. Syst. Myc. III., 432.*  
*Sacc. Syll. 189.*

Broadly effused, indeterminate, white tufts conspicuous, rosy-white, threads rather erect, slender; conidia ovate-oblong, pellucid, granulose within, rather large,  $30-40 \times 15-20 \mu$ .

On living leaves. Victoria. Queensland.

**1918. Oidium leucoconium.** *Desm. Ann. Sci. Nat. 1829, p. 102.* *Sacc. Syll. 190.*

Tufts effused, white; threads creeping, with fertile branches short and erect; conidia ovoid,  $20-30 \times 13-16 \mu$  hyaline.

On rose leaves, etc. Victoria. Queensland. N.S. Wales.

**1919. Oidium Tuckeri.** *B. Moniteur Belge 1850, xx., 2383.*  
*Sacc. Syll. 191.*

Tufts densely gregarious, often confluent and forming an effused whitish stratum, more or less web-like, easily brushed off, becoming at length dingy. Sterile threads bearing lobed haustoria and putting out short sporophores above. Conidia elliptic or oblong, obtusely rounded at both ends, 2 or 3 in chains,  $25-30 \times 15-17 \mu$  diam. Granulose within, hyaline.

On vine leaves and grapes. Queensland.

**1920. *Oidium lycopersicum*.** *Cke. & Mass. Grev. xvi., 114.*

Tufts effused, indeterminate, white, mycelium web-like; threads short, branched, erect. Conidia subglobose, produced in chains, hyaline, 8-9  $\mu$  diam.

On stems and leaves of *Solanum lycopersicum*. Victoria. (Fig. 297.)

Sub-Section 2. **Macronemeæ.** *Sacc.*

*Hyphæ elongated, distinct from the conidia.*

GENUS 3. **TRICHODERMA.** *Pers.*

Sterile hyphæ decumbent, aggregated in rather compact flattened tufts, fertile branches ascending, typically divaricate, 2-3 times divided, apices not inflated. Conidia minute, brightly coloured or hyaline.

**1921. *Trichoderma viride*.** *Pers. Syn. 230. T. lignorum. Sacc. Syll. 284.*

Tufts almost circular, pulvinate, rather compact, then effused, at first white, then in the centre, or altogether blue-green, afterwards turning yellowish; threads filiform, continuous, fertile, ascending, 2-3 times branched; conidia globose, minute, verdigris green, 3  $\mu$  diam., collected in a small acrogenous head.

On bark, wood, etc. Victoria. Queensland. W. Australia. Tasmania.

Conidia of *Hypocrea rufa*. (Fig. 298.)

GENUS 4. **ASPERGILLUS.** *Mich.*

Sterile hyphæ effused, creeping; fertile threads erect, inflated and bladder-like at the apex. Conidia in chains, without basidia, or scarcely different from the conidia.

**1922. *Aspergillus glaucus*.** *Link. Spec. 1., 67. Sacc. Syll. 304.*

Creeping threads floccose, branched, indistinctly septate, uncoloured; fertile threads erect, simple, nearly continuous, hyaline or glaucous, apex inflated into a spherical vesicle; conidia congregated in chains about the vesicle, seated on cylindrical hyaline basidia, 15  $\times$  4  $\mu$ . Conidia globose, muriculate, at first hyaline, then glaucous, 8-10  $\mu$  diam.

On putrescent organic substances. Victoria. Queensland.

**1923. *Aspergillus candidus*.** *Link. Sp. 1., 65. Sacc. Syll. 315.*

Sterile threads creeping, fertile gregarious, erect, and quite simple, persistently white, continuous, 160-200  $\times$  3-5 $\frac{1}{2}$   $\mu$ , inflated at the apex into a small globose-ellipsoid vesicle. Conidia globose, of the same colour, 2 $\frac{1}{2}$ -3  $\mu$  diam., produced in chains.

On dry plants. Alps of New Guinea.

- 1924. *Aspergillus Muelleri*.** *Berk. Linn. Journ.* XIII., 175.  
*Sacc. Syll.* 319.

Snowy white, mycelium creeping; fertile threads erect, rather flexuous; conidia unequal, elliptic, and obovate, minutely rough, 10-12  $\mu$  diam.

On *Lepiota bubalina*, etc. Victoria.

- 1925. *Aspergillus roseus*.** *Link. Berk. Eng. Fl.* v., 340.  
*Sacc. Syll.* 326.

Mycelium thin, creeping; fertile threads simple, not septate; conidia globose, minute, rose colour, produced in chains.

On soil. Victoria.

- 1926. *Aspergillus Cookei*.** *Sacc. Syll. No.* 342.=*Aspergillus mucoroideus*. *Cooke Grev.* XII., 9.

Gregarious; mycelium white, intricately interwoven; fertile threads erect, hyaline, continuous, crowned with a large, globose vesicle; basidia short, cylindrical; conidia for a long time persistent, globose, brown, 4  $\mu$  diam., produced in chains, forming a globose, black capitulum.

On dead plants and leaves. Queensland. Victoria. Roebuck Bay. Arnheim's Land. (Fig. 299.)

#### GENUS 5. **PENICILLIUM.** *Link.*

Sterile hyphæ creeping, septate; fertile threads at the apex unequally verticillately branched, or penicillate. Conidia sphaeroid, produced in chains, hyaline, or brightly coloured.

- 1927. *Penicillium glaucum*.** *Link. Obs.* I., 15.=*Penicillium crustaceum*. *Fr. Syst. Myc.* III., 407. *Sacc. Syll.* 373.

Mycelium effused, creeping, white, sterile hyphæ creeping, intricate, septate; fertile hyphæ erect, branched in a penicillate manner at the apex, branches solitary, or in pairs, erect, once or twice forked at the apex; branchlets erect; conidia seated at the apices in chains, spherical or broadly elliptic, smooth, verdigris-green, hyaline, 4  $\mu$  diam.

On fruit, leaves, stems, etc. N.S.Wales. Victoria. (Fig. 300.)

#### GENUS 6. **RHINOTRICHUM.** *Corda.*

Saprophile. Sterile hyphæ creeping, fertile erect, almost simple, denticulate, and spore-bearing at the apex. Conidia ovoid or oblong, hyaline, or pallid, or brightly coloured.

- 1928. *Rhinotrichum microsporum*.** *Berk. Fl. Tasm.* II., 272.  
*Sacc. Syll.* 447.

Threads adglutinate, forming nearly cylindrical clubs, the apices cylindrically clavate, bearing spicules; conidia globose, minute, 5-6  $\mu$  diam.

On the ground. Tasmania.

**1929. *Rhinotrichum Carteri*. Cooke Grev. Sacc. Syll. 448.**

White, pezizæform, rather compact; threads branched, septate, clavate above, somewhat nodulose; conidia globose, 8  $\mu$  diam., hyaline, slightly apiculate at the base.

On wood. N.S. Wales.

**1930. *Rhinotrichum pulchrum*. Berk. Linn. Journ. XIII., 175. Sacc. Syll. 460.**

Forming a thin, saffron-coloured stratum; threads globosely-clavate at the apex; conidia lemon-shaped, 15  $\mu$  long, mixed with others, which are triseptate.

On rotten wood. Wangaratta. (Fig. 301.)

**1931. *Rhinotrichum ramosissimum*. B. & C. N.A. Fungi No. 662. Sacc. Syll. 469.**

Pale fawn-colour or tan-coloured, threads very much branched, septate, the ultimate joints elongated and denticulate; conidia obovate, apiculate at the base.

On rotten wood. N.S. Wales.

**GENUS 7. *SPOROTRICHUM*. Link.**

Threads vaguely and repeatedly branched, septate, or continuous, procumbent. Conidia apical, somewhat solitary, ovoid, or subglobose.

**1932. *Sporotrichum densum*. Link. Obs. I., p. 11. Sacc. Syll. 507.**

Hyphæ but little branched, hyaline, white, densely crowded in a rather thick stratum. Conidia globose, minute.

On dead insects, etc. Queensland.

**GENUS 8. *BOTRYTIS*. Mich.**

Sterile hyphæ creeping, fertile vaguely branched in a dendritic manner, erect; branches sometimes slender, with the apices rather acute, sometimes thicker and more obtuse, or sometimes inflated at the apices and warted, or with the apices cristate. Conidia variously congregated about the apices of the branchlets, but not truly capitate, continuous, globose, ellipsoid, or oblong, hyaline, or bright-coloured.

**1933. *Botrytis (Polyactis) vulgaris*. Link. Obs. I., p. 14, f. 22. Sacc. Syll. 664.**

Tufts olive-grey; hyphæ floccose, ascending or erect, septate, olive, branched above; branches abbreviated, spreading, sparingly again branched, branchlets for the most part opposite, bearing the conglomerate conidia; conidia oval or elliptic, hyaline or brownish, even, 10-12  $\times$  7-9  $\mu$ .

On herbs, leaves, etc., in decay. Victoria. Tasmania. (Fig. 302.)

GENUS 9. **SEPEDONIUM.** *Link.*

Hyphæ creeping, vaguely branched; conidia acrogenous on the branches, solitary, or 2 to 3 together, globose, continuous, spinulose, or ovoid, hyaline, and bright coloured.

**1934. *Sepedonium chrysospermum.*** *Link. Sp. i., 29.*  
*Sacc. Syll. 754.*

Hyphæ effused, then interwoven, rather thick, almost hyaline, variously forked, spore-bearing branches lateral, short, spreading; conidia solitary, globose, spinulose, yellow, or golden yellow, 14-16  $\mu$  diam.

In Boleti, etc. Victoria. Queensland. W. Australia. (Fig. 303.)

**1935. *Sepedonium aureofulvum.*** *Cke. & Mass. Grev.*  
*xvi., 76.*

Threads creeping, branched; conidia globose, profuse, forming a golden-tawny powder, within decaying *Polyporei*, epispore thin, minutely rough, 9-10  $\mu$  diam.

On *Polyporus*. Victoria.

GENUS 10. **VERTICILLIUM.** *Nees.*

Sterile threads creeping, fertile erect, branches and branchlets verticillate, rather long, bearing a single spore at the tips; conidia soon falling away, globose-ovoid, hyaline, or bright coloured.

**1936. *Verticillium eximium.*** *Berk. Linn. Journ. xiii., 175.*  
*Sacc. Syll. 792.*

Threads branched, branches short, thickened at their apices, furnished with radiating, acute, spore-bearing processes, swollen at the base; conidia oblong, fixed obliquely to a very short pedicel, 6-8  $\mu$  long.

On *Clavaria*. N. S. Wales.

**1937. *Verticillium niveum.*** *Berk. Fl. Tasm. ii., 271.* *Sacc.*  
*Syll. 797.*

White, branched; branches rather short, thickened at the base; conidia oblong, 6-7  $\mu$  long.

On dead Agarics. Tasmania. (Fig. 304.)

**1938. *Verticillium lateritium.*** *Berk. in Handbook 635.*  
*Sacc. Syll. 808.*

Hyphæ elegantly and many times verticillately branched, collected in brick-red, velvety, or woolly tufts, branches 3 or 4 together, acute at the apices; conidia ellipsoid-oblong, rounded at both ends,  $4-6 \times 2\frac{1}{2}-3 \mu$ ; hyphæ and conidia pellucid, brick-red.

On maize. Victoria.

GENUS 11. **NEMATOGONIUM.** *Desm.*

Sterile hyphæ creeping; fertile erect, articulate, spore-bearing joint globose, even; sterile incrassated at each end; conidia even.

**1939. *Nematogonium aurantiacum.*** *Desm. Ann. Sci. Nat.* 1834, 70, t. 2, f. 1. *Sacc Syll.* 867.

Tufts velvety, orange-tawny, effused; sterile threads creeping, thin; fertile erect, articulate, joints cylindrical, inflated at each end, spore-bearing joints globose, interposed; conidia rather large, obovoid, rather acute at the base,  $15 \times 10 \mu$ , almost orange, somewhat capitate, sessile.

On bark and wood. Australia. (Fig. 305.)

**1940. *Nematogonium aureum.*** *Berk. Eng. Fl.* v., 340. *Sacc. Syll.* 868.

Fertile threads erect, short, clavate, with about four articulations; conidia ellipsoid, golden yellow, rarely scattered.

On bark. Queensland.

Section 2. **DIDYMOSPORÆ.**

Conidia ovoid, oblong, or shortly fusoid, uniseptate, hyaline or brightly coloured.

GENUS 12. **TRICHOTHECIUM.** *Link.*

Sterile threads creeping, fertile simple, erect; conidia apical, solitary, uniseptate, hyaline, or brightly coloured.

**1941. *Trichothecium roseum.*** *Link. Obs.* I., 16, f. 27. *Sacc. Syll.* 881.

Tufts pulvinate, confluent, velvety, rather large, at first white, at length rosy; sterile threads creeping, branched, septate, intricate, white; fertile threads erect, nearly simple, a little or scarcely septate, scarcely thickened at the apex; conidia apical, solitary, pyriform, uniseptate, a little constricted at the septum, hyaline, then rosy, even,  $12-18 \times 8-10 \mu$ .

On fruit, branches, leaves, etc. Victoria. (Fig. 306.)

Section 3. **PHRAGMOSPORÆ.**

Conidia oblong, or fusoid, or elongated, or vermicular, 2 to many septate, hyaline or brightly coloured.

(None recorded.)

Family II. **DEMATIÆ.** *Fries.*

Fungi byssoid, brown or black, rather rigid, hyphæ lax (not compound); hyphæ and conidia typically black, sometimes with the hyphæ and the conidia black, and sometimes with the hyphæ black and conidia hyaline.

Section 1. **AMEROSPORÆ.** *Sacc.*

Conidia continuous, globose, ovoid or oblong, becoming blackish, or subhyaline (when the threads are always brown).

Sub-Section 1. **Micronemese.** Sacc.

*Hyphæ very short, or scarcely distinct from the conidia.*

GENUS 13. **CONIOSPORIUM.** Link.

Conidia globose, or ovoid, or discoid, arising from very short hyaline threads, for the most part effused and smearing.

**1942. Coniosporium inquinans.** DR. & Mont. Sacc. Syll.

1152.—*Gymnosporium inquinans.* Berk. Walw. Lusit. No. 60.

Effused, very black; tufts rounded or oblong, confluent and irregular; conidia ovate-globose, opaque, brown, mixed with the threads.

On *Arundo*. W. Australia. (Fig. 307.)

**1943. Coniosporium pterospermum.** Cke. & Mass. Grev. xix., 90.

Pustules gregarious, small, erumpent, elliptical, or elongated, blackish, mycelium forming a kind of pulvinate stroma, from which arise short hyaline sporophores, conidia apical, subglobose or oblong in outline, becoming discoid when free, with a membranous margin, expanded into about six truncate projections, each of which is concave at the apex, spore body globose, continuous, olive-brown, 12  $\mu$ , including the membranous expansion, in one plane 25  $\mu$ .

On *Lepidospermum*. Victoria.

GENUS 14. **TORULA.** Pers.

Sterile hyphæ decumbent; fertile short or very short, or scarcely distinct from the conidia. Conidia in chains, falling away singly or in a series, continuous, brown or black, globose, oblong or subsoid.

**1944. Torula herbarum.** Link. Obs. i., 19. Sacc. Syll. 1230.

Tufts effused, ochraceous olive, then becoming black, rather velvety, sterile threads creeping, septate, sooty; fertile erect, short simple or branched, soon breaking up into globose, olive, then, black. Conidia 6-7  $\mu$  diam.

On rotting stems. Queensland.

**1945. Torula mycetophila.** Cke. & Mass. Grev. xvi., 3.

Tufts minute, very thin, scattered, black, hyphæ sparingly branched, nearly straight; conidia globose-compressed, strongly constricted at the joints, dark olive, 10  $\mu$  diam.

On *Polyporus cinnabarinus*. Victoria. (Fig. 308.)

GENUS 15. **HORMISCIMUM.** Kunze.

Hyphæ short or obsolete, scarcely distinct from the conidia. Conidia in chains (articulate), with difficulty falling away, cubical, or cubically globose, brown.

**1946. Hormiscium stilbosporum.** *Corda in Sturm. t. 46, Sacc. Syll. 1283.*

Tufts erumpent, pulverulent, elongated, confluent, quite black; chains unequal, branched or simple, flexuous; conidia almost equal, somewhat quadrate, connate, brown, 7-8  $\mu$  diam.

On branches. Queensland. (Fig. 309.)

**1947. Hormiscium pithyophilum.** *Nees. Sacc. Syll. 1286.*  
= *Torula pinophila.* *Chev. Fl. Par. t. 34.*

Effused, thick, superficial, polymorphous, quite black, chains of conidia vaguely branched, apex of the branches attenuated, and slightly curved; conidia cubical or globosely cubical, coherent, sooty brown, 18-20  $\mu$  diam.

On pine branches. N.S. Wales.

GENUS 16. **HETEROBOTRYS.** *Sacc.*

Conidia of two forms, in chains, or together in glomerules, sphaeroid, on the same mycelium, the larger in chains, somewhat hyaline, the smaller in glomerules, sooty; hyphae scarcely distinct from the conidia.

**1948. Heterobotrys paradoxa.** *Sacc. Hedw. 1889. Sacc. Syll. 1296.*

Cæspitose, gregarious, black, growing on leaves; threads straggling, creeping, septate, pale sooty, guttulate, 8-12  $\mu$  thick; conidia either in chains connected by a very short sterigma, spherical or somewhat deltoid, 12  $\mu$  diam., nearly hyaline, or in glomerules much smaller, 6  $\mu$  diam., brown.

On leaves. Kangaroo Island. (Fig. 310.)

GENUS 17. **PERICONIA.** *Bon.*

Sterile hyphae creeping, sometimes obsolete, fertile simple, brown, bearing spores at the apex, simple or shortly branched. Conidia globose, brown, not in chains.

**1949. Periconia nigrella.** *Berk. Ann. N. Hist., No. 226, t. XIII., f. 16. Sacc. Syll. 1328.*

Very minute, black, scarcely  $\frac{1}{2}$  m.m. high; fertile threads simple, thin, 4-5 septate; capitulum globose or ellipsoid, conidia globose, minutely rough, coloured, 6-8  $\mu$  diam.

On leaves of *Carex*. Queensland. (Fig. 311.)

Section 2. **DIDYMOSPORÆ.**

Conidia ovoid or oblong, typically uniseptate.

Sub-Section 1. **Micronemæ.**

*Hyphae very short or scarcely distinct.*

GENUS 18. **BISPORA.** *Corda.*

Conidia oblong, uniseptate, brown, produced in chains; hyphae very short, simple.



- 1950. *Bispora monilioides*.** *Corda Ic.* i., 9, t. 2, f. 145.  
*Sacc. Syll.* 1632.

Effused, dark brown, powdery; hyphæ or basidia short, rather conical; conidia shortly fusoid, truncate at the ends,  $20-22 \times 6-7 \mu$ ; thickly uniseptate, not constricted, biguttulate, sooty brown.

On wood. Queensland. (Fig. 312.)

Sub-Section 2. **Macronemese.**

*Hyphæ elongated, distinct from the conidia.*

GENUS 19. **FUSICLADIUM.** *Bon.*

Hyphæ short, straight, sparsely septate, somewhat fasciculate, olive. Conidia ovoid or rather clavate, for a long time continuous, but at length often uniseptate, acrogenous, solitary, or in twins.

- 1951. *Fusicladium dendriticum*.** *Wallr. Fckl. Symb.* 357.  
*Sacc. Syll.* 1642.

Effused, velvety, olive, often dendritic on leaves; threads filiform, erect, fasciculate,  $50-60 \times 5 \mu$ , sparingly septate; conidia apical, fusoid-obclavate  $30 \times 7-9 \mu$ , for a long time continuous, at length uniseptate, not constricted, olive.

On leaves of pear and apple. Victoria. Queensland. S. Australia. (Fig. 313.)

- 1952. *Fusicladium pyrinum*.** *Lib. Fckl. Symb.* 357. *Sacc. Syll.* 1643.

Effused, olive, velvety; conidia ovate-fusoid,  $28-30 \times 7-9 \mu$ , continuous, guttulate, olive; threads short, tapering, denticulate at the apex.

On leaves of pear. Victoria. S. Australia.

GENUS 20. **SCOLECOTRICHUM.** *Kunze.*

Hyphæ short, somewhat fasciculate, olive. Conidia oblong or ovate, produced at the sides or at the tips of the threads.

- 1953. *Scolecotrichum atriellum*.** *Cke. & Mass. Grev.* xvi., 3.

Tufts effused, confluent, black; hyphæ erect, simple, closely septate, brown, paler above; conidia apical, elliptic, uniseptate, not constricted, dark brown,  $25 \times 12 \mu$ .

On twigs of *Passiflora*. Queensland. (Fig. 314.)

GENUS 21. **CLADOSPORIUM.** *Link.*

Hyphæ somewhat decumbent, intricately branched, olive. Conidia at first globose, continuous, then typically uniseptate, ovoid (at times catenulate at first, and sometimes 2-3 septate).

- 1954. *Cladosporium herbarum*.** *Link. Obs.* ii., 37. *Sacc. Syll.* 1665.

Tufts densely aggregated, confluent, constituting a velvety yellow-olive then dark-olive stratum; threads erect or ascending, brown or olive, a little branched, septate,  $5-7 \mu$  thick; conidia growing about the apices of the threads, not in chains or but

slightly, pale brown or olive, variable in form and size, oblong, ovoid, simple or oblong-elliptic, or cylindrical and 1-3 septate, constricted at the septa, even.

On stems, etc. Victoria. Queensland.

var. *epixylinum*. Corda.

On wood. Queensland. (Fig. 315.)

**1955. *Cladosporium oligocarpum*. Corda Icon. t. iv., f. 208.**  
*Sacc. Syll.* 1669.

Tufts minute, solitary, black; hyphae caespitose, erect, long, rather branched, flexuous, thin, slender, olive, rather thickened at the apex, obtuse, and pale. Conidia oblong, white, for the most part two celled, 10  $\mu$  thick.

On wood. Queensland.

**1956. *Cladosporium stenosporum*. B. & C. N. Amer. Fungi**  
*No. 650. Sacc. Syll.* 1670.

Threads simple, thin, septate, rising from a creeping mycelium, fuscous below; conidia oblong, narrow.

On ? Queensland.

**1957. *Cladosporium asteroma*. Fckl. Symb. 355. Sacc.**  
*Syll.* 1698.

Tufts in the centre of a brown spot, dendritically disposed, minute, yellow, becoming greenish. Threads very short, simple; conidia oblong-elliptic, for the most part 1-2 septate, constricted at the septa; upper cell minute, obtusely conical, middle cell large, ovate, lower cell oblong, acuminate at the base, yellowish, 32  $\times$  6  $\mu$ .

var. *minor*. Cooke.

Queensland.

**1958. *Cladosporium hypophyllum*. Fckl. Symb. 356. Sacc.**  
*Syll.* 1714.

Tufts effused, thin, greyish green; threads branched, flexuous, septate, yellow; conidia ovate, two-celled, yellow.

On leaves. Queensland.

**1959. *Cladosporium epiphyllum*. Pers. Corda Ic. III., f.**  
*204. Sacc. Syll.* 1718.

Tufts disposed in a circle, olive, then blackish, large, thick; threads at first erect, then declining, branched, very intricate, pale olive. Conidia copious, then falling away, at first simple, then two or more celled.

On oak leaves, etc. Victoria.

**1960. *Cladosporium typharum*. Desm. Exs. 304. Sacc.**  
*Syll.* 1750.

Tufts elongated or oblong, scattered, turning black, at first seated on a distinct cinereous spot; threads fasciculate, ascending, diver-

gent, septate above; conidia oblong or ovoid, obscurely uniseptate, becoming blackish.

On leaves of *Typha*. Victoria.

**1961. *Cladosporium papyricolum*. B. & Br. Linn. Trans., 1883, p. 68. Sacc. Syll. 1774.**

Threads irregularly branched, hyaline above, brown below; conidia numerous, ovate-oblong, pale brown, binucleate, 20  $\mu$  long.

On paper forming a dark grey stratum. Queensland.

#### Section 3. PHRAGMOSPORÆ.

#### GENUS 22. **HELMINTHOSPORIUM**. Link.

Hyphæ rather rigid, almost simple, brown, often growing on wood. Conidia fusoid, or elongated-clavate, many septate, brown, rigid, even.

**1962. *Helminthosporium Ravenelii*. Curt. in Sill. Journ., 1848, 352. Sacc. Syll. 1971.**

Spongy; threads flaccid, flexuous, nodulose, branched, inarticulate; conidia cymbiform, 3-4 septate, brown, 50  $\mu$  long; endochromes connected by an isthmus.

On inflorescence of grasses (*Sporobolus*). Queensland.

**1963. *Helminthosporium macrocarpum*. Grev. Scot. t. 148. Sacc. Syll. 1973.**

Effused, velvety, dark olive or sooty brown; threads aggregated, lax, subulate, simple, or very sparingly branched, septate; 400-500  $\times$  15-20  $\mu$ , obtuse at the apex, conidia elongated-clavate, 6-9 septate, not constricted, sooty brown, 60-80  $\times$  15-18  $\mu$ , apical.

On trunks and branches. Queensland.

**1964. *Helminthosporium rhabdiferum*. B. & Br. Ann. Nat. Hist. 1865, No. 1053. Sacc. Syll. 2010.**

Effused, black; hyphæ erect, sparingly branched, very shortly septate, conidia straight, at first oblong and pallid, 1-2 septate, then elongated and somewhat linear, dark brown, 7-11 septate, torulose, 50-100  $\mu$  long.

On fruits. S. Australia.

**1965. *Helminthosporium puccinioides*. Sacc. & Berl. Sacc. Syll. 1966.**

Tufts on both surfaces, black, loosely gregarious, disciform, compact, resembling a *Puccinia*, stromatic base convex, thick, black; hyphæ emergent, filiform, tortuous, spuriously septate, pale sooty brown, paler at the apex; conidia clavate, rounded at the apex, 35-37  $\times$  7-9  $\mu$ , 3-4 septate, not constricted, pale sooty brown.

On dead leaves of *Tristania laurina*. Queensland.

**1966. *Helminthosporium inconspicuum*. Cke. & Ell. Grev. t. 99, f. 19. Sacc. Syll. 1969.**

Very thinly effused; threads elongated, septate, nodulose, pale-brown; conidia lanceolate, at first 4-6 nucleate, then 3-5 septate, 80-120  $\times$  20  $\mu$ ; epispore thin.

On leaves of maize. Queensland. (Fig. 316.)

GENUS 23. **BRACHYSPORIUM.** *Sacc.*

Hyphæ rigid, nearly simple, brown, often growing on wood. Conidia ovoid or pear-shaped, 2 or more septate (few), brown.

**1967. *Brachysporium oligocarpum.*** *Corda Icon. t. III., f. 182. Sacc. Syll. 2039.*

Tufts minute, linear, almost parallel; threads flexuous, quite simple, fasciculate, dark-brown, very thinly covered; joints almost quadrate; conidia ovate-oblong, minute,  $30\ \mu$  long, yellow-brown, produced at the vertex into an acute apiculus, 3-septate, not constricted.

On wood. Queensland. (Fig. 317.)

GENUS 24. **CERCOSPORA.** *Fres.*

Hyphæ rather soft, simple or branched, brown, often growing on spots upon leaves. Conidia vermicular, brown, olive, rarely almost hyaline.

**1968. *Cercospora epicoccoides.*** *Cke. & Mass. Grev. XIX., 91.*

Epiphyllous. Spots small or confluent, purple, tufts gregarious, sphaeriform, rather compact, black, resembling an *Epicoccum*, threads very short, simple; conidia profuse, fasciculate, cylindrical, slightly attenuated upwards, 3-5 septate ( $50 \times 5\ \mu$ ), pale olive.

On *Eucalyptus* leaves. Victoria.

**1969. *Cercospora kennedyæ.*** *Cke. & Mass. Grev. XIX., 91.*

Epiphyllous. Spots cinnamon brown, irregular and confluent; tufts scattered, black, punctiform, resembling a *Venturia*, erumpent; threads fasciculate, simple, flexuous, sometimes nodulose, septate, pale-olive; conidia cylindrical, slightly attenuated upwards, 3-septate, hyaline olive ( $40 \times 3\ \mu$ ), as long, or rather shorter, than the threads.

On leaves of *Kennedya prostrata*. Victoria.

**1970. *Cercospora viticola.*** *Ces. Sacc. Syll. 2200.*

Spots on both surfaces, somewhat circular, or irregular, 2-10 m.m. diam., when dry ochraceous, scarcely marginate; threads often on the under surface, here and there densely fasciculate, filiform, septate,  $50-200 \times 4-5\ \mu$ , straight, ochraceous, obtuse above and obsoletely denticulate; conidia elongated-obclavate, attenuated upwards, 3-4 septate, guttulate,  $50-70 \times 7-8\ \mu$ , ochrey-olive.

On vine leaves. Queensland.

**1971. *Cercospora daviesiae.*** *Cke. & Mass. Grev. XVIII., 7.*

Growing on leaves. Spots brown, irregular, angular; threads fasciculate, shortened; conidia cylindrical, or attenuated upwards, obtuse, curved, bent like a bow, 5-septate, pale-brown,  $60 \times 4\ \mu$ .

On fading leaves of *Daviesia latifolia*. Victoria.

**1972. *Cercospora solanacea*. Sacc. & Berl. Sacc. Syll. 2161.**

Spots subcircular, brown, immarginate, tufts punctiform, sooty olive, hyphæ fasciculate, cylindrical, tortuous,  $40-50 \times 4-5 \mu$ , olive; conidia rod-like, rather acute downwards, obtuse above, curved, 3-4 septate, subhyaline,  $40-60 \times 4-5 \mu$ .

On leaves of *Solanum verbascifolium*. Queensland.

**1973. *Cercospora eucalypti*. Cke. & Mass. Grev. xviii., 7.**

Spots rather circular, or confluent, pallid, with a rosy margin; threads abbreviated; conidia cylindrical, curved, obtuse at both ends, scarcely visibly septate, pallid,  $30-35 \times 4 \mu$ .

On fading *Eucalyptus* leaves. Victoria. (Fig. 318.)

**GENUS 25. *HETEROSPORIUM*. Klot.**

Threads rather soft, somewhat caespitose, often branched; conidia oblong, 2, or many-septate, externally echinulate or granulate.

**1974. *Heterosporium epimyces*. Cke. & Mass. Grev. xvi., p. 80.**

Olive, effused in more or less dense velvety patches. Threads sparingly furcate, often simple, flexuous, sparsely septate, pale brown; conidia 1-3 septate, elliptical, rounded at the ends, minutely warted, pale olive ( $25-30 \times 8 \mu$ ).

On decayed Agarics. Victoria.

**Section 4. *Dictyosporæ*.**

Conidia globose, sarcina-form or oblong, transversely and longitudinally septate, brown.

**Sub-Section 7. *Micronemæ*.**

*Hyphæ very short, or scarcely distinct.*

**GENUS 26. *SPORIDESMIUM*. Link.**

Conidia ovoid, then oblong, often large, subsessile or shortly stipitate, clathrately septate, smoky brown.

**1975. *Sporidesmium atrofusum*. Cooke Grev. xii., 12. Sacc. Syll. 2391.**

Effused, velvety, black; conidia elongated, clavate, irregular.  $50-80 \times 15-20 \mu$ , divided in all directions into quadrate cells, dark brown.

On wood. Victoria. (Fig. 319.)

**1976. *Sporidesmium melanopus*. B. & Br. Ann. Nat. Hist. No. 455. Sacc. Syll. 2356.**

Tufts broad, black; conidia subglobose, opaque, apparently simple, then multiseptate, seated on a cellular base of variable size.

On bark. Victoria.

GENUS 27. **STEMPHYLIUM.** *Wallr.*

Hyphæ decumbent, intricately branched, hyaline, or sooty brown. Conidia apical on the branches, ovoid, or subglobose, 2 to many-septate and muriform, sooty brown.

**1977. Stemphylium pulchrum.** *B. Sacc. Syll.* 2187. =

*Mystrosporium pulchrum.* *Berk. Hook. Journ.* 1845, 70.

Effused, olive; threads white, rugose, furcate, or trifid; others are thin and fertile; conidia oblong, many-septate, and clathrate, a little rough, blackish.

On rotten wood. W. Australia. (Fig. 320.)

GENUS 28. **MACROSPORIUM.** *Fries.*

Hyphæ somewhat fasciculate, rather soft, erect, or ascending, nearly simple, or branched, coloured, bearing at or about the apex oblong or clavate conidia, which are divided in both directions in a muriform manner.

**1978. Macrosporium cladosporioides.** *Desm. Pl. Crypt.* 1857, p. 3. *Sacc. Syll.* 2501.

Spots large, tawny, irregular; tufts numerous, minute, rounded, dark olive, velvety; threads erect, simple, nodulose, septate, semi-hyaline, fasciculately joined,  $150-200 \times 5 \mu$ . Conidia rather pellucid, at some time torulose, unequal, 2-3 or up to 10-septate, ovoid, oblong, or elongated, or club-shaped, and attenuated below into a pedicel,  $15-75 \mu$  long.

On leaves and stems of herbs. Victoria.

**1979. Macrosporium commune.** *Rabh. Fun. Eur.* 1360, *Sacc. Syll.* 2499.

Tufts densely gregarious, numerous, brown; hyphæ fasciculate, almost simple, ascending, septate, not constricted, brown ( $80-90 \times 4-6 \mu$ ); conidia variable in form and size, obovate-oblong, clavate, 3-5 septate, with transverse septa-olive ( $18-28 \times 9-12 \mu$ ). Epispore sparingly granular.

On stems, leaves, etc. Queensland.

**1980. Macrosporium camelliae.** *Cke. & Mass. Grev.* xvii., 42.

Epiphyllous, spots orbicular or confluent, pallid, with a broad, brown margin (1 c.m. or more), threads tufted, septate ( $30-40 \mu$  long), simple, pale olive. Conidia clavate, triseptate, then multi-septate and muriform ( $50-60 \times 15-25 \mu$ ), attenuated below into a slender pedicel, pale olive.

On living leaves of *Camellia*. Victoria.

**1980 bis. Macrosporium tomato.** *Cke. in Rav. Ex.* 603, *Grev.* xii., 32. *Sacc. Syll.* 2552.

Orbicular, black; threads short, robust, flexuose, septate; conidia clavate, a little attenuated upwards, scarcely stipitate, muriformly septate, brown ( $100-120 \times 20-22 \mu$ ).

On living tomato fruit. Queensland. (Fig. 321.)

- 1981. *Macrosporium Readeri*.** *Winter Rev. Myc.* 1886, 212. *Sacc. Syll. Add.* 3640.

Tufts forming an effused black substratum, fascicles of hyphæ more or less convergent, minute; hyphæ erect, simple, very long, rigid, flexuous and torulose, closely septate, brown ( $300-320 \times 9-10 \mu$ ); conidia clavate, attenuated into a cylindrical stem, transverse septa 10-14, longitudinal 2, or more, constricted, brown ( $110-140 \times 19-20 \mu$ ).

On stems of thistle. Victoria.

- 1982. *Macrosporium peponicolum*.** *Rabh. in Sitz.* 1867. *Sacc. Syll.* 2549.

Forming rather large, orbicular, black spots; sterile threads slender, pale, creeping; fertile threads short, erect, septate; conidia clavate, triseptate, then multiseptate and muriform, constricted, variable in size, amber brown ( $40-50 \times 16 \mu$ ), attenuated below into a hyaline pedicel.

On papaw fruit. Queensland.

### GENUS 30. *FUMAGO*. Pers.

Hyphæ decumbent, intricate, often confluent in muriformly-divided gangliæ, frequently forming a black, somewhat evanescent, crust. Fertile hyphæ erect, branched. Conidia ovoid, oblong, or deformed, 1-2 septate, typically in chains = conidia of *Capnodium*.

- 1983. *Fumago vagans*.** *Pers. Myc. Eur.* 1., p. 9. *Sacc. Syll.* 2618.

Threads creeping, scatteringly branched, either free or fasciculate, often confluent in cellulose ganglia, torulose, olive or sooty brown, constituting a thinly effused, membranaceous, black stratum. Fertile threads ascending, short, and corymbosely branched above. Conidia apical on the branches in short chains, for the most part two-celled, rarely continuous, or 2-septate, 5-15  $\mu$  long.

On living leaves. Queensland. (Fig. 322.)

### Family III. *STILBEE*. Fr.

Bysoid fungi, pale or brown. Sterile hyphæ creeping, sparse; fertile collected in fascicles (stroma), bearing conidia at the apex.

#### Series 1. *Hyalostilbeæ*. Sacc.

*Hyphæ and conidia pallid.*

#### GENUS 31. *STILBUM*. Tode.

Stroma rather tapering, capitate at the apex, bearing conidia from the coalescing threads. Conidia minute, continuous, at first involved in mucus.

- 1984. *Stilbum erythrocephalum*.** *Ditm. Sturm. Fl.* III., t. 45. *Sacc. Syll.* 2680.

Gregarious or somewhat scattered, stem rather thick, terminated by a rosy or red globosely-turbinate mealy capitulum; conidia

ovoid,  $4-6 \times 2-3\frac{1}{2} \mu$ , hyaline, apical or filiform, septulate, hyaline, basidia  $50-60 \times 3-3\frac{1}{2} \mu$  long.

On dung. Victoria. W. Australia.

**1985. *Stilbum formicarum*.** *Cke. Mass. & Grev.* xviii., 8.

Stems elongated, slender (5-8 m.m. long), black, flexuous, slightly incrassated below; capitulum obovate, rosy; conidia elliptic,  $10 \times 3 \mu$ , hyaline.

On dead ants. Victoria. (Fig. 323.)

**1986. *Stilbum caninum*.** *Cke. & Mass. Grev.* xx., 36.

Gregarious, clavate or subspathulate, flesh-coloured (2-3 in. high), capitulum darker, continuous with the smooth stem. Conidia ellipsoid, continuous, hyaline,  $5 \times 3 \mu$ .

On dog's dung. Victoria.

Stem sometimes furcate. Larger, and more robust than *S. fimetarium*, with smaller conidia.

**1987. *Stilbum corallinum*.** *Cke. & Mass. Grev.* xix., 91.

Cespitose, flesh-coloured, stems attenuated upwards, branched with short branches, mealy; capitulum hemispherical, or rather irregular, subglobose, orange-red. Conidia elliptical, continuous, hyaline ( $5 \times 2 \mu$ ).

On bark. Victoria.

**1988. *Stilbum cinnabarinum*.** *Mont. Fl. Cub.* 368, t. 11, f. 3. *Sacc. Syll.* 2705.

Gregarious, flesh-coloured; capitulum convex-hemispherical, vermilion-red; stem short, mealy; conidia oblong = conidia of *Sphaerostilbe*.

On bark. Queensland.

GENUS 32. **PILACRE.** *Fries.*

Stroma stipitate, capitate; capitulum subglobose or depressed, composed below of branched, flexuous, radiating threads, membranaceous above, fragile, and falling away. Conidia simple, globular, collected in a peripheral compact stratum.

**1989. *Pilacre divisa*.** *Berk. Fl. Tasm.* II., 271. *Sacc. Syll.* 2750.

Capitulum globose, clay-coloured; stem divided, brownish; hyphae straight; conidia 5-6  $\mu$  diam., subglobose, nucleate.

On bark. Tasmania. (Fig. 324.)

**1990. *Pilacre Petersii*.** *B. & C. Ann. Nat. Hist.* No. 824. *Sacc. Syll.* 2752.

Stem short, white, 4 m.m. high, capitulum rather large, 2-4 m.m. diam., hyphae nearly straight, anastomosing, branches tortuous; conidia globose, 5  $\mu$  diam., sessile, tawny.

On trunks. N.S. Wales.



GENUS 33. **ISARIA.** Pers.

Stroma vertical, clavate, or branched, everywhere bearing conidia from threads or longitudinal thin fibres. Basidia formed from the apices of the threads. Conidia minute, globose, or ellipsoid, continuous, hyaline.

**1991. Isaria umbrina.** Pers. Syn. 689. Sacc. Syll. 2807.

Clubs without stem, fawn-colour, collected in radiating tufts, branches divided, straight, a little dilated at the apex, pulverulent everywhere, conidia obovate, umber,  $5-6 \times 2\frac{1}{2}-3\frac{1}{2} \mu$ .

On wood. Victoria.

**1992. Isaria radians.** Berk. Fl. Tasm. II., 271. Sacc. Syll. 2828.

Tufts 18-22 m.m. broad. Greyish fawn-colour, orbicular, covered everywhere with verticillate or dichotomous flocci. Conidia elliptic, small,  $4-5 \mu$  diam.

On bark. Tasmania.

**1993. Isaria graminiperda.** B. & Mull. Gard. Chron. 1873, 1596. Sacc. Syll. 2842.

Bright orange, gelatinous ( $\frac{1}{4}$  in. high), slender, sparingly branched, closely involved at the base in the matrix from whence it grows. Conidia minute, globose.

On grass (*Lolium*). Victoria.

var. **fuciformis.** Berk. Linn. Journ. XIII., 175. Sacc. Syll. 2839.

Pallid (1 c.m. high), branches acute; conidia minute, globose.

On grasses. Queensland. Victoria.

The latter is hardly a variety, differing in no essentials from the type. (Fig. 325.)

**1994. Isaria cicadæ.** Miq. Ann. Sc. Nat. 1838, p. 378. Sacc. Syll. 2841. Variety.

Seated within, and growing through the joints of the dead *Cicada*. Stroma stout, simple, or confluent, with a shortened stem, pallid, pulverulent, conidia minute.

On *Cicada*. Victoria.

**1995. Isaria suffruticosa.** Cke. & Mass. Grev. XVIII., 45.

Subcæspitose, white, 3 c.m. high; stem distinct, simple, smooth, or slightly farinose, upwards branched and divided, branches slender, interwoven, with lateral branchlets up to the acute tips; ultimate threads bearing the conidia singly at the apex of short sterigmata, minute, narrowly ellipsoid,  $4-5 \times 1\frac{1}{2} \mu$ .

On hairy caterpillar. New England, Australia.

GENUS 34. **CERATIUM.** *Alb. & Schw.*

Stroma clavate, simple or branched, obsoletely cellular, everywhere bearing conidia on monosporous basidia thrust out upon the surface; conidia rather large, globose, hyaline.

**1996. Ceratium hydroides.** *A. & S. Consp. t. 2, f. 7. Sacc. Syll. 2845.*

Stroma tapering, simple, or sparingly branched, 3-6 × 1-2 m.m., white or yellowish, shortly velvety from the spreading exserted sporophores; conidia ovoid, 10-12 × 8  $\mu$ , or globose, 10  $\mu$  diam., internally minutely guttulate, hyaline.

On rotten wood. N.S. Wales. Queensland.

**1997. Ceratium arbuscula.** *B. & Br. Linn. Journ. xiv., 97. Sacc. Syll. 1851.*

Snowy white. Stroma dendritic, fastigiately branched above from the simple base; conidia broadly elliptic, 10-15  $\mu$  long.

On rotten wood. Queensland. (Fig. 326.)

Series 2. **Phæostilbeæ.** *Sacc.*

*Hyphæ and conidia brown, rigid.*

GENUS 35. **HARPOGRAPHIUM.** *Sacc.*

Stroma stipitate, capitate, or equal at the apex, sooty brown, upwards the loosened sporophores paler; conidia elongated or sickle-shaped, continuous, hyaline.

**1998. Harpographium corynelioides.** *Cke. & Mass. Grev. xvi., 76.*

Cæspitose, erumpent, black (resembling *Corynelia*); stems composite, radiating, connate at the base, clavate above, or subulate, simple or forked (2-3 m.m. long). Tufts 1 c.m. long, 5 m.m. broad. Threads dichotomous below, sooty brown, very much branched above, hyaline, septate; conidia cylindrical, curved, nucleate, hyaline, 12 × 3  $\mu$ .

On branches of *Leptospermum juniperinum*. Victoria.

**1999. Harpographium quaternarium.** *Cke. & Mass. Grev. xvi., 8.*

Tufts black, minute; stems composite, somewhat clavate above, rather fasciculate below, olive, threads septate, thickened at the apices, bearing about four spicules; conidia fusiform, continuous, hyaline, 12 × 2-3  $\mu$ , spicules very thin, 10-15  $\mu$  long; conidia for the most part quaternate.

On twigs of *Passiflora*. Queensland. (Fig. 327.)

Section 4. PHRAGMOSPORÆ.

GENUS 36. **PODOSPORIUM**. *Schwein.*

Hyphæ rigid, black, coalescing in a simple or branched stem; conidia laterally scattered on both sides (not capitate), oblong or elongated, two or many septate, sooty brown.

**2000. Podosporium grande.** *Cooke Grev. XII., p. 11. Sacc. Syll. 2982.*

Large, black, woolly, forming dense tufts, 25-50 m.m. long, and 12-25 m.m. high; threads erect (12 m.m. and more), fasciculately crowded together, septate, dark brown; conidia elongated-clavate, many-septate (8-11), brown,  $70-80 \times 10 \mu$ .

On stems of *Aster argophyllus*. Victoria. (Fig. 328.)

GENUS 37. **ISARIOPSIS**. *Fres.*

Slender, tawny, or becoming pale, tapering, hyphæ loosely connected; conidia distributed in panicles or a lax capitulum.

**2001. Isariopsis clavispora.** *B. & C. Sacc. Syll. 2998.*  
= *Graphium clavisporum*. *B. & C. N.A. Fungi No. 619.*

Minute, olive, arising from orbicular brown spots; threads relaxed above and flexuous; conidia linear, or clavate, many septate (3-4), guttulate,  $44 \times 4-5 \mu$ .

On vine leaves. Queensland. (Fig. 329.)

Family IV. **TUBERCULARIÆ**. *Ehrb.*

Stromatoid, compact, wart-like, globose, discoid, superficial or erumpent, waxy or subgelatinous; conidia apical on conglutinated sporophores.

Series 1. **Tuberculariæ mucedinæ.**

*Hyphæ and conidia white or bright coloured.*

GENUS 38. **TUBERCULARIA**. *Tode.*

Tubercles wart-like, or tuberculate, sessile or nearly sessile, very often reddish, waxy, smooth, very rarely ciliate at the margin; conidia on laterally branched filiform sporophores, ovoid or oblong, continuous, hyaline, typically solitary.

**2002. Tubercularia leguminum.** *Cke & Mass. Grev. XVI., 33.*

Minute, erumpent, flesh colour, pulvinules sessile, irregular, somewhat confluent; sporophores short, straight; conidia elongated-ellipsoid, usually slightly curved,  $20 \times 5 \mu$ .

On legumes of *Cassia*. Queensland. (Fig. 330.)

GENUS 39. **DENDRODOCHIUM**. *Bon.*

Tubercles pulvinate or wart-like, various, white or bright coloured; conidia apical on verticellately branched sporophores, ovoid or oblong, hyaline.

**2003. Dendrodochium ellipticum.** *Cke. & Mass. Grev. XVI., 76.*

Tufts pulvinate, erumpent, oblong, pallid ( $\frac{1}{2}$ -1 m.m. long), convex; conidia elliptical ( $8 \times 5 \mu$ ), hyaline, basidia furcate above.

On rotten wood. New Zealand.

GENUS 40. **ILLOSPORIUM.** *Mart.*

Tubercles wart-like or pulvinate, or somewhat effused, white or bright coloured, between gelatinous and waxy, afterwards falling away. Conidia globose, then sigmoid, variable, agglutinated in mucose glomerules. Sporophores various, interwoven, passing into conidia.

**2004. *Illosporium flavellum.*** *B. & Br. Linn. Trans.* 1883, p. 68.

Stipitate, yellow, stem rather short, conidia globose.

On Lichens. Queensland.

**2005. *Illosporium obscurum.*** *Cke. & Mass. Grev.* xvi., 113.

Pulvinules somewhat gregarious, orbicular, erumpent, at length almost superficial, then falling away, minute, sooty brown; threads abbreviated, dichotomously branched; conidia solitary at the apex, or 2 to 3 in a chain, globose, hyaline, 12  $\mu$  diam.

On leaves of *Eucalyptus globulus*. Victoria.

**2006. *Illosporium flaveolum.*** *Sacc. Syll.* 3106.

Pulvinules very minute, subglobose, gregarious, yellow ( $\frac{1}{8}$  m.m. diam.); threads dichotomously branched, tortuous, 8  $\mu$  thick, guttulate within, curved at the tips, rounded, then falling away.

On rotten wood. Queensland. (Fig. 331.)

GENUS 41. **ÆGERITA.** *Pers.*

Tubercles subglobose, sessile, slender, somewhat mealy, growing on wood superficially; sporophores white or pale coloured, rather short and thick, simple or branched, becoming obsolete. Conidia globose or ovoid, rather large, solitary, subapical.

**2007. *Ægerita candida.*** *Pers. Syn.* 684. *Sacc. Syll.* 3124.

Crowded, like granules, globose or hemispherical, size of a poppy seed, white but yellowish when dry, even, smooth, then mealy from the conidia; sporophores short, fasciculate, cylindrical, rather thick, flexuous; conidia ellipsoid (12-15  $\times$  7-8  $\mu$ ), for the most part apical, hyaline.

On wood and bark. Victoria. (Fig. 332.)

GENUS 42. **FUSICOLLA.** *Bon.*

Tubercles pulvinate, lobed, or effused, unequal, superficial, bright coloured, rather gelatinous. Sporophores filiform, branched, continuous; conidia apical on the branches, cylindrical, or fusoid-falcate, continuous, hyaline.

**2008. *Fusicolla incarnata.*** *Cke. & Mass. Grev.* xvii., 8.

Epiphyllous. Pustules small, gregarious, seated on paler spots, convex, rosy flesh colour, here and there confluent (scarce  $\frac{1}{4}$  m.m. diam.), somewhat gelatinous, or scattered over the petioles and midribs; conidia cylindrical, rounded at the ends, nucleate or granular, hyaline, straight, simple, 16-20  $\times$  4-5  $\mu$ ; sporophores very short and deciduous.

On dead coriaceous leaves. Queensland. (Fig. 333.)

GENUS 43. **THOZETIA.** *Berk. & Müll.*

Tubercles minute, globose. Conidia oblong, with a bristle at each extremity, hyaline.

**2009. Thozetia nivea.** *Berk. Linn. Journ. xviii., 388. Sacc. Syll. 3213.*

White, conidia oblong, hyaline, acute at each extremity and terminated by a long bristle.

On rotten wood. Queensland.

Section 3. **PHRAGMOSPORÆ.**GENUS 44. **BACTRIDIDIUM.** *Kunze.*

Tubercles superficial, rather tender, hemispherical, convex. Conidia oblong-cylindrical, large, multiseptate, on tapering basidia.

**2010. Bactrididium flavum.** *Kunze Myk. Hft. t. 1, f. 2. Sacc. Syll. 3268.*

Tubercles globose, hemispherical, beautiful orange, rather large ( $1-1\frac{1}{2}$  m.m. diam.); conidia fusiformly clavate,  $160-180 \times 30-40 \mu$ ; 6-septate, honey-coloured; sporophores rather long,  $150-160 \times 8-9 \mu$ , hyaline.

On rotten wood. Queensland. (Fig. 334.)

**2011. Bactrididium magnum.** *Cooke Grev. VIII., 60. Sacc. Syll. 3273.*

Pulvinate, somewhat hemispherical or irregular ( $1-5$  m.m. diam.), pallid; conidia clavate, 5-9 septate, large, hyaline,  $300 \mu$ , and more, long.

On naked wood. Victoria. New Zealand.

GENUS 45. **FUSARIUM.** *Link.*

Pustules pulvinate or rather effused. Conidia fusoid, or falcate, when mature typically multiseptate, apical on branched sporophores.

**2012. Fusarium lateritium.** *Nees Syst. 31, t. 26. Sacc. Syll. 3283.*

Pustules various, erumpent, brick-red; conidia fusoid, arcuate, acuminate at each end,  $30-40 \times 4-5 \mu$ , 4 to 5 septate, basidia oppositely branched.

On branches. W. Australia.

**2013. Fusarium rubicolor.** *B. & Br. Linn. Trans. II., 1883, t. 15, f. 10, 11.*

Effused, greyish flesh-colour, conidia elongated, 3-4 septate, broader at the apex,  $50 \mu$  long.

On *Eucalyptus* leaves, spreading over galls. Queensland.

**2014. *Fusarium decipiens*. Cke. & Mass. in Bailey 2nd Suppl. Queensland Plants.**

On *Ficus aspera*. Queensland.

Specimens or description not traced, possibly the same as *F. hypocreoideum*.

b. *FUSISPORIUM*. *Pustules effused, lax, byssoid*.

**2015. *Fusarium (Fusisporium) longisporum*. Cke. & Mass. Grev. xvi., p. 4.**

Tufts erumpent, convex, at length confluent, rosy, then whitish. Hyphæ repeatedly dichotomous, septate, hyaline; conidia fusiform, abruptly uncinuate at each extremity, or nearly straight, acute, 5-septate, hyaline,  $100 \times 5-7 \mu$ .

On twigs of *Passiflora*. Queensland. (Fig. 335.)

c. *SELENOSPORA*. *Conidia continuous. Pustules compact*.

**2016. *Fusarium (Selenospora) hypocreoideum*. Cke. & Mass. Grev. xvi., 76.**

Pulvinules convex, pulvinate, resembling a *Hypocrea* (1 m.m. diam.), somewhat discoid, orange. Conidia fusoid, continuous, hyaline,  $15 \times 3 \mu$ .

On fading leaves of *Ficus aspera*. Queensland.

GENUS 46. **MICROCERA**. *Desm.*

Pustules conic or pulvinate, thin; conidia narrowly sickle-shaped, multiseptate, apical on the filiform branches of the sporophores.

**2017. *Microcera coccophila*. Desm. Ann. Sci. Nat. 1848, x., 359. Sacc. Syll. 3473.**

Small, rather caespitose, conical or horn-like, simple, rosy, girt at the base by a thin whitish membrane extending from the composite sporophores; conidia elongated, acute at each end, curved, 3-5 septate, hyaline,  $70-100 \times 4-5 \mu$ , sporophores filiform, long,  $2\frac{1}{2} \mu$  thick.

On *Cocci* attached to branches. Queensland.

**2018. *Microcera rectispora*. Cke. & Mass. Grev. xvi., 4.**

Tufts rather sphæroid, almost sessile, at first reddish, at length pallid; conidia elongated-fusiform, acute at each end, 7-9 septate, straight, hyaline,  $150-200 \times 10 \mu$ ; sporophores short, thin, furcate, hyaline.

On coccus of the orange. Queensland. (Fig. 336.)

Series 2. **Tuberculariæ Dematiæ.**

*Hyphæ blackish; conidia same colour or hyaline.*

GENUS 47. **EPICOCCUM**. *Link.*

Pulvinules globose or convex, cellular, conidia globose (often areolate or rough); sporophores very short, seated on effused discoloured spots.

**2019. *Epicoccum scabrum*. Corda Ic. I., t. 2, f. 91. Sacc. Syll. 3491.**

Gregarious; spots none; stroma subglobose, fleshy, brownish without and within; conidia globose, not reticulate, brown, rough, with a short uncoloured pedicel, 18-20  $\mu$  diam.

On rotting stems. Queensland. (Fig. 337.)

GENUS 48. **STRUMELLA**. Sacc.

Pulvinules wart-like, composed of variously branched hyphæ, and conidia of variable form.

**2020. *Strumella hysteroidea*. Cke. & Mass. Grev. xvii., 69.**

Pulvinules gregarious, erumpent, rather prominent, elongated-elliptic, resembling *Hysterium* (1-2 m.m. long,  $\frac{1}{2}$ -1 m.m. broad), compact, black. Hyphæ very short; conidia sphaeroid or subsphaeroid, continuous, olive, 7-8  $\mu$  long.

On denudated branches. Queensland. (Fig. 338.)

**2021. *Strumella sacchari*. Cooke Grev. xix., 45.**

Pustules gregarious, erumpent, black, patelloid or subclavate, with a short stem-like base, or cylindrical-multiform ( $\frac{1}{2}$  m.m. diam.) hyphæ short, hyaline, simple; conidia cylindrically elliptical, continuous, pale fuscous, 10-12  $\times$  3  $\mu$ .

On sugar cane. Queensland.

**2022. *Strumella patelloidea*. Cke. & Mass. Grev. xx., 7.**

Stroma orbicular, patelloid, scattered, superficial, black (1-1 $\frac{1}{2}$  m.m. diam.), conidia subglobose or ovate, continuous, dark olive (7-8  $\mu$  diam.), on short sporophores.

On naked wood. Tasmania.

Similar in fruit to *S. hysteroidea*, but quite different in habit and appearance.

GENUS 49. **ACTINOMMA**. Sacc.

Pustules superficial, flattened, black, radiately lobed, star-shaped, seated on a sooty setulose hypothallus. Conidia globose, hyaline or brownish, in branched chains.

**2023. *Actinomma gastonis*. Sacc. Syll. 3564.**

Gregarious, superficial, black, flattened ( $\frac{1}{2}$ - $\frac{3}{4}$  m.m.), even, contracted when dry, with 3-5 rays, girt at the base with filiform, tortuous, septate, sooty threads, conidia globose, 5-5 $\frac{1}{2}$   $\mu$ , hyaline, pale brown, in branching chains.

On phyllodes of *Acacia*. Queensland.

GENUS 50. **MYROTHECIUM**. Tode.

Pustules scutellate or disciform, black; margin fringed with white, cilia thin, hyaline; conidia minute, ovoid or cylindrical, on rod-like basidia.

**2024. *Myrothecium roridum*. Tode Meck. v., f. 38. Sacc. Syll. 3550.**

Tufts discoid, then confluent and difformed, black, with a white margin (2-6 m.m. diam.), fertile threads simple or furcate, fasci-

culate ( $30-40 \times 2 \mu$ ); conidia cylindrical, obtuse ( $8-10 \times 2 \mu$ ), biguttulate, pale olive.

On old twine. Queensland.

**2025. *Myrothecium inundatum*. Tode. Meck. t. 5, f. 39.**  
*Sacc. Syll.* 3552.

Pustules disciform, variable in shape, disc plane, dark olive, with a white margin; conidia globose, ellipsoid,  $3-4 \times 1\frac{1}{2}-2 \mu$ , olive; sporophores filiform, fasciculate, hyaline,  $40 \times 1 \mu$ .

On putrid *Agarics*. Queensland. (Fig. 339.)

**\* SACCHAROMYCETES.**

Unicellular, multiplying themselves by budding, and reproducing themselves by endogenous spores. Living singly or in bud-colonies, chiefly in saccharine solutions.

GENUS 51. **SACCHAROMYCES.** *Meyen.*

Unicellular, with vegetative increase by budding, and reproduction by spores, which, for the most part, arise by subdivision of the contents of the mother-cell.

**2026. *Saccharomyces cerevisiæ*. Meyen.**

Cells mostly round, or oval ( $8-9 \mu$  long), isolated, or united in small colonies; spore-forming cells isolated ( $11-14 \mu$  long); spores, mostly three or four together in each mother-cell ( $4-5 \mu$  diam.).

In beer. (Fig. 340.)

**2027. *Saccharomyces ellipsoideus*. Reess.**

Cells elliptic, mostly  $6 \mu$  long, isolated, or united in little branched colonies; spore-forming cells mostly isolated; spores 2-4 together in each mother-cell ( $2-3\frac{1}{2} \mu$  diam.).

Producing spontaneous fermentation in must.

**2028. *Saccharomyces apiculatus*. Reess.**

Cells lemon-shaped, shortly apiculate at each end ( $6-8 \mu$  long), sometimes slightly elongated, and at length oval, daughter-cells arising only from the ends of the mother-cell, for the most part soon isolated, rarely united in small, scarcely branched colonies.

In fermentation of wine. (Fig. 343.)

**2029. *Saccharomyces mycoderma*. Reess.**

Cells oval, elliptic, or cylindrical ( $6-7 \mu$  long,  $2-3 \mu$  broad), united in richly-branched colonies. The cells often elongated, so as to resemble a mycelium. Spore-forming cells as much as  $20 \mu$  long; spores 1-4 in each mother-cell.

On fermented fluids, etc.



\*\* **SCHIZOMYCETES.**

Unicellular, multiplying by repeated subdivision in one, two, or three dimensions of space, and frequently reproducing themselves by spores, which are formed endogenously.

GENUS 52. **BACTERIUM.** *Cohn.*

Cells shortly cylindrical, elongated-elliptical, or fusiform, increasing by transverse division, spontaneously motile. Daughter-cells either separating or united in a chain. Spore-formation as in *Bacillus*.

**2030. Bacterium termo.** *Duj. Zooph. 212.*

Cells shortly cylindrical, oblong (about  $1\frac{1}{2}$ -2  $\mu$  long), with a flagellum at each end.

On putrefying substances. Australia. (Fig. 341.)

GENUS 53. **BACILLUS.** *Cohn.*

Cells elongated, cylindrical, almost always combined in straight, rod-like rows, or threads, increasing by transverse division. Reproduction by spores.

**2031. Bacillus anthracis.** *Cohn. Beitr. 177.*

Cells cylindrical, twice as long as broad (4  $\mu$  long), very slender, for the most part united into long, often bent, threads. Spores, not at all, or little, thicker than the threads ( $1\frac{1}{2}$ -2  $\mu$  long).

In the blood of animals in splenic fever. (Fig. 342.)

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This latter group is manifestly imperfect, as it should include the microbes present in many epidemic diseases, of man and animals, and probably also of plants. All these require to be watched and reported by someone on the spot.

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8. **MYXOMYCETÆ.**

At first mucilaginous, flowing, motile, of variable form, forming plasmodia. In the state of fructification the plasmodium is divided into many immoveable fruits. Fruits either regular (peridia) or irregular (plasmodiocarp). Peridia sometimes confluent, forming a composite fruit (*Æthelium*). Spores endogenous, free in the fruit or emitted in zoospores. Zoospores confluent, forming a motile plasmodium.

Section 1. **PERITRICHÆ.**

Wall of sporangium not incrustated with lime, capillitium absent, or formed from wall of sporangium.

Sub-Section 1. **Tubulinæ.**

*Wall of sporangium not perforated.*

GENUS 1. **TUBULINA.** *Pers.*

Scattered and regular, or irregular and forming a plasmodiocarp, or compacted together to form a naked or corticated *æthelium*; walls very thin, single, often iridescent, not perforated; columella and capillitium absent.

**2032. *Tubulina cylindrica.*** *Bull. Rtfki. Mon.* 220. *Sacc. Syll.* 1391.

Sporangia cylindrical, rounded at the apex, gregarious, mostly crowded, standing at first on a plane, then convex hypothallus; mass of spores rusty-chestnut, or pale chestnut; spores for three-fourths of their surface reticulated, the residue clad with scattered ridges and warts, 7-9  $\mu$  diam.; walls of the sporangium when quite mature beautifully iridescent.

On rotten wood. Queensland. Tasmania.

var. **nitidissima.** *Berk.* = *Tubulina nitidissima.* *Berk. Linn. Journ.* xviii., 387. *Sacc. Syll.* vii., 1394.

Sporangia shining, golden-yellow. Spores pallid, globose.

On *Eucalyptus microtheca.* Queensland.

**2033. *Tubulina spumarioidea.*** *Cke. & Mass. Mass. Mon.* 42. = *Licea spumarioidea.* *Cke. & Mass. Grer.* xvi., 74.

*Æthelium* irregular, cinereous, cortex membranaceous, reticulate with branched veins; sporangia soon diffuent, capillitium obsolete. Spores rather large, spherical, covered with rounded warts, 16-18  $\mu$ , yellow.

Running over twigs and on the ground. Victoria. (Fig. 344.)

Sub-Section 2. **Cribrariæ.***Wall of sporangium perforated.*GENUS 2. **ENTERIDIUM.** *Rost.*

Æthelium covered with a general, irregularly perforated, membranaceous cortex; walls of component sporangia with symmetrical perforations, or irregularly broken up to form a capillitium-like structure.

**2034. Enteridium olivaceum.** *Rost. Mass. Mon. 44.*

Æthelium very variable in form, flattened or pulvinate, olive; spores in clusters of from 5-20, single spores truncate, the free portion convex and warted, remaining portion smooth, 11-15  $\mu$  diam.

On wood. W. Australia.\* (Fig. 345.)

GENUS 3. **CLATHROPTYCHIMUM.** *Rost.*

Sporangia not stipitate, closely seated on a common substratum; walls with the external apex alone permanent, campanulate, united by a few simple threads which cross over from the apex to the base.

**2035. Clathroptychium rugulosum.** *Wall. Rtfki. Mon. 225 (Figs. 25, 28, 29, 30). Sacc. Syll. 1396.=Licea applanata. Berk. Hook. Journ. 1845, p. 67. Mass. Mon. p. 51.*

Hypothallus strongly developed; sporangia bell-shaped at the apex, attached to the base by six simple, permanent, triangular threads; colour of the æthelium variable, red-brown or ochrey-brown, now and then olive by reflection; mass of spores ochre or ochrey-brown; spores delicately warted, 8-10  $\mu$  diam.

On dead twigs, etc. Queensland. W. Australia. (Fig. 346.)

Section 2. **COLUMELLIFERÆ.**

Wall of sporangium without lime; capillitium originating from a central, usually elongated columella.

Sub-Section 1. **Stemonites.**

*Capillitium springing from every part of an elongated columella.*

GENUS 4. **STEMONITIS.** *Gled.*

Sporangia cylindrical, shortly stipitate, gregarious; hollow stem lengthened in the centre, attenuated upwards as a columella; capillitium formed of numerous threads radiating from the columella, combined into a loose net, the ultimate branches united into a network at the surface, parallel to the walls of the sporangium, extended and combined by the help of very short, delicate perpendicular (to the net) ends.

**2036. Stemonitis fusca.** *Roth. Rtfki. Mon. 193. Mass. Mon. 73. Sacc. Syll. 1362.*

Sporangia cylindrical, obtuse, standing on a strongly developed hypothallus; columella approaching the apex of the sporangium; hypothallus, stem, columella, capillitium, and mass of spores

violet-black; surface of the net of the capillitium with the meshes very small, less, or little larger than the spores; spores bright violet, almost smooth,  $6\frac{1}{2}$ -9  $\mu$  diam.

On rotten wood, etc. Victoria. West Australia. Queensland. Tasmania. Anderson's Creek. New Guinea.

**2037. *Stemonitis Friesiana*.** *DeBary. Mass. Mon. p. 82.*  
=*Comatricha Friesiana. Rostk. Mon. 199 (Figs. 51, 56).*  
*Sacc. Syll. VII., 1356.*

Sporangia globose, ovate, or ellipsoid, erect ( $\frac{1}{2}$ -1 $\frac{1}{2}$  m.m. high); stem subulate, black, shining ( $1\frac{1}{2}$ -3 m.m. long, now and then 6 m.m.), penetrating within as a columella, reaching from  $\frac{1}{2}$ - $\frac{3}{4}$  the height of the sporangium, then spreading in numerous threads; capillitium of flexuous threads combined into a net, not reaching the margin in free ends, nearly equally thick; spores violet-brown, with a thick, smooth membrane, 8-10  $\mu$  diam.

On rotten wood. Queensland. Tasmania.

**2038. *Stemonitis ferruginea*.** *Ehr. Sylv. Berl. 1818. Sacc. Syll. VII., 1365. Rtfki. Mon. 196, f. 31-39, 41-44.*

Sporangia cylindrical, obtuse, gregarious, standing on a strongly-developed hypothallus; columella cleaving the apex of the sporangium, with a few threads of the capillitium; hypothallus, stem, columella, and capillitium violet-black, but the mass of spores ferruginous cinnamon; surface of the net of the capillitium with very small meshes, but little larger than the spores; spores bright ferruginous,  $5\frac{1}{2}$ -7 $\frac{1}{2}$   $\mu$  diam.

On rotten wood. Queensland. New Zealand. (Fig. 347.)

#### Sub-Section 2. **Lamprodermeæ.**

*Capillitium springing from the apical portion of a short or elongated columella.*

GENUS 5. **LAMPRODERMA.** *B. Rtfki. Mon. 202.*

Sporangium globose or ellipsoid, stipitate; stem lengthened directly into the columella, scarce reaching half the height of the sporangium, either cylindrical, or swollen and clavate at the apex; capillitium fasciculate, originating from the base, usually regularly forked, rarely combined into a tangled net; wall of sporangium delicate, usually of a metallic lustre, now and then thick, with the saucer-like base of the sporangium permanent.

**2039. *Lamproderma echinulatum*.** *Berk. Rostk. Mon. App. p. 25. Sacc. Syll. VII., 1344.* = *Stemonitis echinulata. Berk. Fl. Tasm. 268.*

Sporangia stipitate, dark steel-blue, or blackish, iridescent; stem short, subcylindrical, expanding at the base into a firm hypothallus, filled with large, thick-walled cells that are globose or polygonal from mutual pressure, becoming smaller near the apex of the stem; columella thick, about one-third the height of

the sporangium, subclavate, filled with cells like the stem; capillitium dense, almost colourless in every part, originating from the apex of the columella and at once forming an irregular network, without the usual primary undivided branches; threads irregular in thickness, arcuate, often flattened, and triangular at the nodes, spores globose, dingy purple, coarsely echinulate, 18-22  $\mu$  diam.

Amongst moss. Tasmania. (Fig. 348.)

**2040. *Lamproderma Listeri*. *Massee Mon.* p. 97.**

Sporangia stipitate, globose, blackish-purple, iridescent, lower portion often persistent as a ragged frill round the stem; stem elongated, straight, or subflexuous, conical, smooth, blackish-brown, filled with amorphous lumps of organic matter, expanding at the base into a hypothallus; columella slender, about one-third the height of the sporangium, slightly incrassated or expanded in a discoid manner at the apex; capillitium rather dense, the main branches springing from the apex of the columella 3-4  $\mu$  thick, simple for half their length, then 2-3 times dichotomously branched; branches becoming thinner towards the tips, straight, sometimes anastomosing laterally, free tips colourless, other parts dark; spores globose, dingy purple, coarsely spinulose, 15-17  $\mu$  diam.

On moss, wood, etc. Tasmania. N. Zealand.

Section 3. CALOTRICHEÆ.

Wall of sporangium without an external deposit of lime, capillitium present, not springing from a columella.

Sub-Section 1. *Arcyria*.

Threads of capillitium either attached by one end, with the free tips more or less branched, or combined to form an irregular network.

GENUS 6. **PERICHÆNA**. *Fries*.

Sporangia sessile, gregarious, dehiscing irregularly or in a circumscissile manner; wall usually double, the outer often containing granules of lime, or a layer of granules of organic matter; capillitium variously developed, in some species forming an irregular network, in others almost obsolete; threads of capillitium without definite markings; spores globose.

**2041. *Perichæna corticalis*. *Rost. Mon.* 293, fig. 188.**

*Mass. Mon.* 115, fig. 114-117. *Sacc. Syll.* 1435.

Sporangia spherico-depressed, crowded, dehiscing in a circumscissile manner; lid convex, brown, bluish-purple, sometimes whitish, smooth; mass of capillitium and spores pale yellow; capillitium scanty, sometimes almost obsolete; threads thin, smooth, or here and there notched; spores globose, warted, warts variable in size, sometimes very indistinct, at others well developed, never smooth, 9-12  $\mu$  diam.

On bark and wood. W. Australia.

**2042. *Perichæna applanata*.** *C. & M. Mass. Mon. p. 116.*  
 = *Hemiarcyria applanata*. *Cke. & Mass. Grev. xvi., 20.*  
*Sacc. Syll. vii., 1515.*

Sessile, adnate on a broad base, much depressed, circular in outline or æthalioid and irregular, dehiscing in an irregularly circumscissile manner; wall with a dense layer of granules of lime on its inner surface, bright blue-grey; mass of capillitium and spores clear orange-yellow; capillitium rather scanty, forming a loose net; threads 3-5  $\mu$  diam., sometimes notched or with scattered rudimentary spinules; spores globose, minutely warted, 11-12  $\mu$  diam.

On rotting *Cycas*. Queensland. (Fig. 349.)

GENUS 7. **LYCOGALA.** *Mich.*

More or less rounded, variously coloured æthalia, joined together intricately into an obtuse vein-like, naked plasmodiocarp; outer part of the combination formed into a double cortex, covered on the outside with coloured cells; tubes of the capillitium originating in the inner stratum of the cortex, penetrating in numerous places its inner wall, branching within the body of the æthalam, and formed into a loose net in which many arms run out in free, blunt ends.

**2043. *Lycogala epidendrum*.** *Bux. Rtfki. Mon. 285, fig. 1, 7 to 12.* *Sacc. Syll. 1484.*

Æthalam roundish, sociable, large as a pea, shining, surface distinctly warted, rose-colour, but commonly dull-brown with a shade of red; mass of spores and capillitium very variably coloured, violet-red, purple, rosy, dull clay-colour, greenish clay-colour, or almost greyish; thickenings of the tubes of the capillitium only distinct in the young state, when dry the surface only exhibits irregular wrinkles; spores very small, smooth,  $3\frac{1}{2}$ -5 $\frac{1}{2}$   $\mu$  diam.

On stumps. W. Australia. Queensland. Victoria. (Fig. 350.)

FAMILY XVI. **TRICHIACEÆ.**

Capillitium either of simple threads with both ends attenuated, or combined into a net, with thin-sided walls, provided with serpentine thickenings; wall of sporangium, capillitium, and spores usually of the same colour in the same sporangium, mostly olive or brownish.

GENUS 8. **PROTOTRICHIA.** *Rost.*

Sporangia simple or fasciculate, stipitate or sessile, thin, reflecting metallic tints, dehiscing irregularly; capillitium well-developed, elaters attached by one end to the basal portion of the sporangium, becoming attenuated upwards and dividing into a variable number of slender, tapering free tips, the slender branchlets are sometimes more or less connected laterally, elaters furnished with spirals, irregular rings, or entirely smooth.—*Mass. Mon. 126.*

**2044. *Prototrichia metallica*.** *Mass. Mon. 127.* = *Trichia metallica*, *B. & Br. Fl. Tasm. 268.*

Sporangia scattered, stipitate or sessile, on a broad base, spherical or depressed, and lenticular, smooth, shining, copper-

colour with metallic tints; stem very short, rather thick, darker in colour than the sporangium; mass of capillitium and spores pale flesh-colour, or yellowish; elaters elongated-fusiform, 6-7  $\mu$  at thickest part, 300-400  $\mu$  long, terminating at the apex in a pencil of simple or branched, cylindrical, smooth, sometimes nodulose filaments, 2  $\mu$  thick and 40-60  $\mu$  long; spirals broad, flat, close; spores globose, smooth, 9-11  $\mu$  diam.

On wood. Tasmania. (Fig. 351.)

#### GENUS 9. **ARCYRIA.** Hill.

Sporangia regular, plasmodiocarp, or aethaloid; wall single, dehiscing irregularly, or in a circumscissile manner, basal portion persistent, columella absent; stem usually filled with large cells, which become smaller upwards, and gradually pass into normal spores; capillitium dense, usually becoming elastically elongated, and protruding during dehiscence, free, or the basal threads attached to the inside of the stem, or attached at several points to the lower persistent portion of the sporangial wall; threads combined to form a dense network with or without free ends, ornamentation in the form of continuous ridges arranged in a spiral, or prominent, plate-like half-rings, or spines arranged in a very open spiral, or wart-like spines scattered equally over the entire surface of the threads.—*Arcyria* and *Hemiarcyria*. Rost.

\* EU-ARCYRIA. *Threads without continuous spirals.*

**2045.** *Arcyria punicea.* Pers. Rtfki. Mon. 268, fig. 190, 192, 197. Sacc. Syll. 1457. Mass. Mon. 142.

Sporangia more or less ovate, of a beautiful lustre, usually with an elongated erect stem; colour of the walls of the sporangia, tubes, stem, mass of capillitium and spores when mature, variable, mostly of a clear red or carmine-brown, more rarely nut-brown, now and then dirty-ochre, bright pale flesh-colour or rusty-brown; tubes of the net of the capillitium very much flattened,  $3\frac{1}{2}$   $\mu$  diam.; thickenings in the form of half rings or rings, or spines with half rings standing in rank,  $\frac{3}{4}$   $\mu$  high, encircling the thread in a spiral with a very diffuse twist; spores smooth,  $6\frac{1}{2}$ -7 $\frac{1}{2}$   $\mu$  diam.

On rotten stumps. Queensland.

**2046.** *Arcyria ferruginea.* Sauter. Rtfki. Mon. 280., fig. 194. Mass. Mon. 144. Sacc. Syll. 1470.

Sporangia ovate, stem usually short, standing on a narrow substratum; mass of spores and capillitium usually brick-red, now and then ferruginous, reddish-ochre or ochre; capillitium not very much entangled, tubes three-sided, with rounded angles, one side wall very thick, border-like, parallel to itself, provided with erect thickenings, the two others furnished with irregular net-like delicate reticulations; its width exhibits very variable increase, oscillating even in the net of one sporangium, and mixed without consideration; spores coloured whilst living, 8-11  $\mu$  diam.

On rotten wood, etc. Queensland. (Fig. 352.)

- 2047. *Arcyria incarnata*.** *Pers. Rostk. Mon.* 275. *Mass. Mon.* 145.=*Arcyria adnata*. *Sacc. Syll.* VII., 1461.

Sporangia in the type ovate, with an evanescent, short, erect stem, crowded in clusters; mass of spores and capillitium usually flesh-colour, more rarely rosy or umber, exceptionally ochre or carmine-brown; net of the capillitium composed of cylindrical tubes  $4\ \mu$  diam.; thickenings in the form of a border of half rings or spines, or half rings standing in rank, more sharp pointed than stout; spores smooth,  $6-7\frac{1}{2}\ \mu$  diam.

On rotten wood. Queensland. W. Australia.

- 2048. *Arcyria nutans*.** *Bull. Rtski. Mon.* 277. *Sacc. Syll.* 1464. *Mass. Mon.* 150.

Sporangia cylindrical in the typical form, with a short, disappearing stem, so as to be seemingly sessile; capillitium much relaxed, drooping; mass of spores and capillitium of a dull yellow colour, resembling that of chamois leather, or more rarely brownish-yellow; tubes of the net of the capillitium when fully developed of variable width,  $3-4\ \mu$  diam.; thickenings in the form of spines cover the thick tubes, amongst which others are met with, dispersed without order, having rings or half rings; spores  $7\frac{1}{2}-8\frac{1}{2}\ \mu$  diam.

On rotten wood. W. Australia. Queensland. Victoria.

- 2049. *Arcyria cinerea*.** *Bull. Rtski. Mon.* 272, *figs.* 182-185, 193.=*Arcyria pomiformis*. *Rost. Mon.* 271. *Sacc. Syll.* 1458. *Mass. Mon.* 151.

Sporangia ovate, globose, or elongated-ovate, with an even, long, erect, straight stem; mass of capillitium and spores usually bright-grey, more rarely greyish flesh-colour, greyish-yellow, straw-colour, or dull yellow; tubes of capillitium developed in the interior, and on the outside of variable width, with variable thickenings. Thickenings of the inner and outer not equally spiny, but those of the interior warty, and the external very spinulose; spores  $7-9\ \mu$  diam., smooth.

On stumps. Queensland.

**\*\* HEMIARCYRIA.** *Threads with continuous spirals.*

- 2050. *Arcyria rubiformis*.** *Mass. Mon.* 158.=*Hemiarcyria rubiformis*. *Pers. Rtski. Mon.* 262, *figs.* 201, 230, 231. *Sacc. Syll.* 1512.

Sporangia usually fasciculate, collected in a short coalescing stem, often of a beautiful metallic lustre; mass of spores and net of elaters brownish-red; tubes of the elaters  $4-5\ \mu$ , very rarely branching, but not with numerous arms, which terminate in free ends, either not distinctly narrowed, smooth, or swollen, and then provided with a short spine, or more rarely obtuse; spirals two to four, usually three, flat, when matured armed with numerous spines, separated by depressions twice as broad as the spirals; spores  $10-11\ \mu$  diam., with a stout but smooth membrane.

On dead wood. Tasmania.



- 2051. *Arcyria serpula*.** (Rost.) Mass. Mon. 164.=*Hemiarcyria serpula*. (Rost.) Mon. 267, Figs. 200, 227, 228. Sacc. Syll. 1514.

Either a vein-like, creeping plasmodiocarp, usually anastomosing to form a net, or subglobose, scattered, and sessile on a broad base, wall thin, fragile, yellow, sometimes tinged brown; mass of spores and capillitium yellow or orange; threads of the dense capillitium, 5-6  $\mu$  thick, forming a net with numerous free ends, which usually terminate in a smooth, thin, tapering spine, 8-10  $\mu$  long; spirals thin, not prominent, rather distant, furnished with numerous long, slender spinules; spores globose, with narrow, raised, flat bands, forming an irregular net work, 10-12  $\mu$  diam.

On rotten wood. N.W. Australia. N. Zealand.

- 2052. *Arcyria fuliginea*.** Mass. Mon. 169.=*Hemiarcyria fuliginea*. Cke. & Mass. Grev. xvi., 74.

Threads anastomosing, spinulose, 3-4  $\mu$  diam., spines on one side only, spirally disposed; spores globose, smooth, scarcely discoloured, 8  $\mu$  diam.; mass of capillitium and spores sooty brown. (Description imperfect, the peridia being destroyed.)

On leaves of *Atherospermum*. N.S. Wales.

#### Sub-Section 2. **Trichia.**

Threads of capillitium free, simple, or branched, not anastomosing to form a network.

#### GENUS 10. **TRICHIA.** Haller.

Wall of sporangium single, dehiscing irregularly; capillitium consisting of free, simple, or branched threads, having the wall furnished with raised bands, arranged in a spiral manner; spores globose, epispore smooth or variously ornamented.—Mass. Mon. 173.

- 2053. *Trichia fragilis*.** Rost. Mon. 246, figs. 203, 204, 225, 226. Mass. Mon. p. 176. Sacc. Syll. 1494.=*Trichia lateritia*. Lev. Sci. Nat. v., 167. Sacc. Syll. 1494.

Sporangia varying from globose to pyriform, stipitate, or fasciculate on a common stem, wall smooth, blackish or purple brown, pale brown or yellowish; stem dark, longitudinally wrinkled, equal or tapering upwards, erect or curved, often twisted in the compound forms, inside of the wall often with coloured organic lumps; mass of capillitium and spores varying from dull orange brown to primrose yellow, separated from the hollow of the stem by a membrane; elaters fusiform, 4-5  $\mu$  at thickest part, sometimes branched, spirals flat, rather broad, not very prominent, tips smooth, tapering to a thin point; spores globose, minutely warted, 11-14  $\mu$  diam.

On wood, etc. S.W. Australia. Tasmania. N. Zealand.

- 2054. *Trichia varia*.** Pers. Rostfl. Mon. 251. Sacc. Syll. 1497. Mass. Mon. 178.

Sporangia diversely developed, either with a stem, or sessile; elaters cylindrical, very thin walled, 4  $\mu$  diam., with the

ends usually not distinctly swollen, consequently running through to the ends, usually a little bent on one side, two to three times the diameter of the elater in length; spirals two, turning to the right, separated by intervening spaces three to four times as broad, on the convex side the bent elaters very much prominently notched; spores 10-14  $\mu$ , delicately warted.

On stumps. Queensland. Tasmania. N. Zealand.

**2055. *Trichia contorta*.** *Ditm. Rostf. Mon.* 259. *Sacc. Syll.* VII., 1503. *Mass. Mon.* 182.

Variable in form, sometimes with a manifest, elongated, flexuous, rather compressed, umber peridium, sometimes a veined, creeping, arcuate brown or bay-brown plasmodium, opaque or rather shining; elaters  $2\frac{1}{2}$ -3  $\mu$  thick, conspicuously thickened at the apex, terminated by thin, even spines, turns of the spiral 2-4, scarcely distinct; spores yellow, 9-10  $\mu$  diam.

On rotten wood. Queensland. Tasmania.

**2056. *Trichia verrucosa*.** *Berk. Fl. Tasm.* 269. *Mass. Mon.* 191.

Sporangia pyriform, brown or chestnut, shining, passing downwards into a long, slender stem, simple or botryoid, scattered, springing from a thick, broadly effused hypothallus; mass of capillitium and spores ochraceous; threads of capillitium not branched, cylindrical, 8-10  $\mu$  thick, with smooth, tapering tips of variable length, and straight or curved; spirals close, thin, not prominent; spores globose, with narrow, raised flat bands combined into a few large, irregular polygonal meshes, bands not punctate, 14-16  $\mu$  diam.

On wood. Tasmania. (Fig. 353.)

**2057. *Trichia affinis*.** *DeBary. Rost. Mon.* 257. *Mass. Mon.* 194. *Sacc. Syll.* 1499.—*Trichia chrysosperma*. *Bull.* in lists.

Sporangia clustered, circular or elliptical, sessile on a broad base, seated on a distinct hypothallus, clear pale yellow; mass of elaters and spores pale yellow; elaters cylindrical, 4-6  $\mu$  thick, ending in short, tapering, smooth tips; spirals thin, rather close, not prominent, sometimes with short spinules; spores globose, with broad, slightly raised, flat bands, combined into a net-work, or sometimes with free ends, surface of bands pitted, 10-14  $\mu$  diam.

On wood, etc. Queensland. Tasmania.

Section 4. LITHODERMÆ.

Wall of sporangium with an external deposit of lime, capillitium present.

Sub-Section 1. *Didymæ*.

Threads of capillitium without lime.

GENUS 11. **CHONDRIDERMA.** *Rtzi.*

Peridium sessile or stipitate, splitting irregularly, or in a stellate manner; wall of peridium single or double; outer wall covered with shapeless granules of lime, or crustaceous by their accumulation, separated from the inner one (when present) by a considerable space filled with air; inner wall delicate, containing no lime, iridescent; columella usually present; threads of capillitium thin, without lime, either sparingly bifurcating or branching, and anastomosing to form a more or less dense net.

**2058. Chondrioderma difforme.** *Pers. Mass. Mon. 212. Rtzi. Mon. 177, figs. 137, 164, 165. Sacc. Syll. 1282.*  
*Physarum album. Fries.*

Sporangia sessile, roundish, deformed, outer wall crustaceous, chalky-white, inner either opaque or beautifully iridescent, without columella or capillitium, or with a scarcely evident capillitium; spores dark-violet, smooth,  $10-12\frac{1}{2}$   $\mu$  diam.

On bark, leaves, twigs, herbaceous stems, etc. Victoria. Queensland. (Fig. 354.)

GENUS 12. **DIDYMIUM.** *Schrad.*

Wall of sporangia single or double, outer wall covered with crystals of lime, either scattered singly over the surface, or compacted into a crustaceous separable coating; sporangia sessile or stipitate, without or with a columella, always splitting irregularly, now and then plasmodiocarpous; capillitium usually well developed, threads thin, without lime, either radiating from the columella or base of sporangium as simple or furcate threads, which usually combine laterally towards the apex, or combine throughout their length to form a dense, irregular network, with the angles more or less triangular or flattened; spores lilac or violet-brown. *Mass. Mon. 219.*

**2059. Didymium farinaceum.** *Schrad. Rtzi. Mon. 154. figs. 128, 171, 174. Mass. Mon. 219. Sacc. Syll. 1309.*

Sporangia hemispherical or a little flattened, decidedly umbilicate at the base, greyish-white (in the form without lime, black and shining), stipitate; stem rigid, black, shining, or exceptionally ferruginous-brown, usually equal in length to the sporangium, or longer, or shorter and disappearing, being concealed in the umbilicus of the sporangium; columella large, hemispherical, black, of large cells proper to itself, the numerous folds of the membrane imperfectly dividing the cells; cells irregularly filled with small granules of lime, collected in lumps; capillitium of simple threads, permanent, serpentine, bright-brown; spores dull-violet, very spinulose,  $10-12\frac{1}{2}$   $\mu$ .

On dead leaves, twigs, etc. Queensland.

- 2060. *Didymium squamulosum*.** *A. & S. Rtfki. Mon.* 159, fig. 148. = *Didymium australe*. *Berk. Hdbk. N. Zeal.* 191. *Mass. Mon.* 223. *Sacc. Syll.* 1301.

Sporangia either hemispherical and flattened, or exactly globose, always with the stem slightly umbilicate at the base; stem snow-white, entering within the sporangium, and expanding into a globose snow-white columella; lower wall of sporangium and columella smooth, upper part when mature split into simple oval scales; threads of capillitium thin-edged, without colour, spreading out from the columella into numerous branches at a very sharp angle; spores bright violet, almost smooth, 8-10  $\mu$ .

On wood, dead leaves, etc. Tasmania. Australia. N. Zealand.

- 2061. *Didymium spumarioides*.** *Fries. Mass. Mon.* 232. = *Chondrioderma spumarioides*. *Fr. Rtfki. Mon.* 174, figs. 142, 145, 151. *Sacc. Syll.* 1269.

Sporangia irregular in form, either snow-white on concolorous, or greyish on flesh colour, always standing in clusters on a strongly developed hypothallus; columella either not recognizable or snow-white, free in the centre, or multiform, flesh colour; capillitium of colourless threads or bright violet, combined into a net; spores violet, very spinulose, 8-13  $\mu$ .

On leaves, moss, etc. Queensland.

- 2062. *Didymium serpula*.** *Fr. Mass. Mon.* 234. *Sacc. Syll.* 1297. = *Didymium complanatum*. *Batsch. Rtfki. Mon.* 151, figs. 166, 180.

Plasmodiocarp either cushion-like, flattened, scattered, or else vein-like, creeping, now and then combined into an irregular network; surface covered with grey, but not numerous, crystals; capillitium of very thin threads combined into a dense net, remaining behind in connection with peculiar large cells; spores bright-violet, nearly smooth, 7½-8  $\mu$ .

On leaves, etc. Queensland.

*Sub-Genus. HEMIDIDYMIUM. Mass.*

*Capillitium usually dense, threads branching and anastomosing to form an irregular network throughout the capillitium, angles usually flattened, and more or less triangular.*

- 2063. *Didymium pezizoideum*.** *Mass. Mon.* 239. = *Chondrioderma pezizoideum*. *Jungh. Sacc. Syll.* 1256.

Peridia somewhat nodding, whitish cinereous, arising from a simple, mealy, crustaceous membrane, cracking, but persistently composite, cup-shaped, discoid, stipitate; stem awl-shaped, brownish, smooth, expanding at the base in a shining membrane, closely adnate to the matrix; capillitium formed from a network of flocci; spores violet, even, 8-9  $\mu$  diam.

On dead wood of *Erythrina*. Queensland.

**2064. *Didymium australis*. Grev. xvii., 7. Mass. Mon. 237.**

Sporangium globose or slightly compressed, indistinctly umbilicate, covered with a dense white layer of crystals of lime, which breaks away in patches; stem elongated, erect, filiform, slightly thickened downwards, bright brown; threads of capillitium colourless, slender, variously branched; spores globose, smooth, dingy, purple-brown, 10-11  $\mu$  diam.

Gregarious. Stem 3-4 m.m. long; sporangium about 2 m.m. broad  $\times$  1.5 m.m. high.

On old *Auricularia*. Queensland. (Fig. 355.)

**2065. *Didymium flavicomum*. Mass. Mon. 242. = *Physarum Berkeleyi*. Rostk. Mon. 105. *P. flavicomum*. Berk. Hook. Journ. 1845, 66. Sacc. Syll. vii., 1193.**

Peridium hemispherical, umbilicate, rather violet or lilac; columella none; stem elongated, straight, slender, attenuated upwards, rimose, gilvous or copper colour; capillitium solid, with granules of lime, variable in size, gilvous-yellow; spores pale violet, 8-11  $\mu$ , even.

On rotten wood. W. Australia.

**GENUS 13. SPUMARIA. Pers.**

*Æthaliu* complex, branching, each sporangium surrounded by an outer common cortex; sporangia dendritic, covered on the outside with small crystals of lime, with a central columella extending to the branches; capillitium passing from the columella to the walls, and forming a thick net, cortex composed of empty cells, touching each other, snow-white.

**2066. *Spumaria alba*. Bull. Rostk. Mon. 191, figs. 158, 172, 175. Sacc. Syll. vii., 1338. Mass. Mon. 256.**

Columella empty, cylindrical, branched, not reaching to the apex of the sporangium, threads of capillitium thick, formed into a thick network, very much thickened at the points of junction; spores dull-violet, very spinulose, 10-13  $\mu$ .

On grass. N.S. Wales. (Fig. 356.)

**GENUS 14. DIACHÆA. Fr.**

Sporangium stipitate; stem prolonged within the sporangium as a columella, and, together with it, filled with small granules of lime; capillitium of threads extending from the rigid columella to the wall of the sporangium, becoming thinner and thinner, combined into a thick net.—*Rtiki*. Mon. 190.

**2067. *Diachæa leucopoda*. Bull. Mass. Mon. 259. *Rtiki*. Mon. 190. Sacc. Syll. 1335. Cooke *Myx.* 44, fig. 178. = *Diachæa elegans*. Fries.**

Sporangia cylindrical, obtuse, stipitate; stem short, thickened at the base, snow-white, prolonged within the sporangium into a cylindrical, obtuse, white columella, not reaching to the apex; threads of the capillitium whitish, thin; spores translucent, violet, beautifully iridescent, 7-9  $\mu$  diam.

On leaves, etc. Victoria. (Fig. 357.)

Sub-Section 2. **Physariæ.**

## Capillitium containing lime.

GENUS 15. **CRATERIUM.** *Trent.*

Sporangia regular, determinate, splitting with a lid, walls papyraceous, stiff, invariably stipitate. Lower part of the sporangium, after the spores are expelled, permanent, cyathiform; walls of sporangia double or treble, the outer passing down into the tubular stem, inner usually surrounding the mass of spores on all sides, and the base of the tubes of the capillitium, stout, inevitably containing numerous granules of lime, rigid, persistent after the dispersal of the spores; columella almost always evident, formed in the centre by the free, strongly-developed knots of the capillitium.

**2068. *Craterium confusum.*** *Mass. Mon.* 263. = *Craterium vulgare.* *Rost. Mon. p.* 118. *Craterium pyriforme.* *Rost. Mon. p.* 120. *Sacc. Syll.* 1234. *Craterium minutum.* *Rost. Mon. p.* 120. *Craterium pedunculatum.* *Sacc. Syll.* 1233.

Sporangia variable in form, cyathiform, infundibuliform, or pyriform, stipitate or rarely subsessile, varying in colour from bright brown through ochraceous to nearly white, lid sharply differentiated from wall of sporangium, flat or slightly convex, usually chalk white, rarely ochraceous, deciduous; stem variable in length and depth of colour: capillitium abundant, knots of lime large, irregular, white or yellowish, usually by aggregation forming a more or less distinct columella; spores globose, dirty violet, very minutely verruculose, 8-11  $\mu$  diam.

On leaves, etc. W. Australia. Tasmania. New Zealand. (Fig. 358.)

GENUS 16. **PHYSARUM.** *Pers.*

Sporangia solitary, plasmodiocarp or combined to form an æthaliium, wall single or of two distinct layers; threads of capillitium springing from all parts of the sporangial wall, combined to form an irregular network, with the numerous nodes or angles very much and irregularly swollen and filled with granules of lime, the internodes thin and without lime, dehiscence irregular, or by a longitudinal fissure in the plasmodiocarp form.

\* *Sporangia stipitate.*

**2069. *Physarum rufibasis.*** *B. & Br. Ceylon p.* 85. *Mass. Mon.* 279. = *Tilmadoche rufipes*, *Berk. in Queensland list.*

Scattered or gregarious, stipitate; sporangia globose, dull yellow or tawny, even, sprinkled with minute particles of lime, dehiscing irregularly; stem elongated, slender, tapering upwards, longitudinally furrowed, expanding at the base into a small circular hypothallus, bright brown, filled with minute granules of lime; columella absent; capillitium dense, forming an irregular network,

nodes incrassated, irregularly angular, large, numerous, filled with bright yellow granules of lime, connected at various points by rather thin, long internodes; spores pale lilac, globose, very indistinctly verruculose,  $10\ \mu$  diam.

On moss. Queensland.

**2070. *Physarum Readeri*. Mass. Mon. 282.**

Sporangium stipitate, sphaerico-depressed, plane, or slightly umbilicate below, greyish, covered with distinct, but closely arranged white innate flakes of lime; stem equal to or longer than the sporangium, very thick, equal, brown, longitudinally rugulose, expanding into a broad dark-brown hypothallus, filled with masses of lime and organic matter; capillitium absent, but when the sporangium is empty a brown spot is seen at the base, which corresponds to the apex of the stem; capillitium dense, nodes few, large, angularly stellate, filled with colourless granules of lime, internodes elongated, slender; spores dingy lilac, globose, very minutely verruculose,  $15-16\ \mu$  diam.

On wood. Victoria. (Fig. 359.)

**2071. *Physarum leucopus*. Rost. Mon. 101. Mass. Mon. 287. Sacc. Syll. 1188.**

Sporangia globose, broadly ellipsoid, or a little flattened, stipitate or sessile, rarely elongated and flexuous or anastomosing, wall at first covered with a continuous snow white coat of lime, which soon becomes broken up into smooth minute patches, stem variable in length, white, containing lime, straight, brittle, slightly thinner upwards, longitudinally rugose, passing into a more or less evident hypothallus; columella absent; capillitium strongly developed, snow white, with numerous large irregularly branched knots, containing lime in small granules; spores globose dingy lilac, rather coarsely warted, warts almost black,  $9-12\ \mu$  diam.

On wood, etc. Australia. New Zealand.

**2072. *Physarum leucophæum*. Fries Sym. Gast. 24. Rost. Mon. 113, figs. 77-78. Mass. Mon. 288, figs. 63-66, 96. Sacc. Syll. 1192.**

Sporangia subglobose, usually a little depressed below, stipitate or sessile, wall thin, with irregular, white, innate patches of lime, dehiscing irregularly; stem usually longer than the sporangium, erect, slightly attenuated upwards, longitudinally rugulose, brown, paler above, passing into a dark hypothallus; capillitium dense, colourless, anastomosing very irregularly, threads thin, often flattened at the angles, which rarely contain lime; spores globose, dingy lilac, minutely warted,  $8-10\ \mu$  diam.

On leaves, etc. Australia. New Zealand.

\*\* *Sporangia sessile.*

**2073. *Physarum cinereum.*** *Batsch. Rtfki. Mon.* 102.  
*Sacc. Syll.* 1189. *Mass. Mon.* 298.

Sporangia irregularly globose, or hemispherical; sometimes completely flattened, sessile, gregarious, or crowded together; invariably without stem or columella; usually variable in size; capillitium strongly developed, containing numerous, angular, irregular granules of lime, differing in size; spores bright violet, with a smooth membrane, or scarcely warted, variable in size,  $7\frac{1}{2}$ - $13\ \mu$  diam.

On bark, wood, leaves, etc. Victoria.

**2074. *Physarum scrobiculatum.*** *Berk. Massee. Mon.* 360.=*Didymium scrobiculatum.* *Berk. Hook. Journ.* iv., 66.

Sporangia sessile on a broad or narrowed base, seated on a thick wide-spreading hypothallus, scattered or aggregated, often irregular, and æthalioid, or several blending together to form a plasmodiocarp, pale flesh colour, brittle, often furfuraceous; capillitium dense, forming an irregular network, nodes numerous, large, irregularly angular, filled with yellow granules of lime, connected at several points by long, thin, colourless internodes without lime; columella absent; spores lilac-brown, globose, minutely warted,  $13$ - $14\ \mu$  diam.

On charred wood. W. Australia.

GENUS 17. **BADHAMIA.** *Berk.*

Sporangia with single wall, splitting irregularly; capillitium uniformly grown to the wall, with numerous branches combined into an all-sided net, usually thick, entirely filled with small granules of lime; spores originating in clusters, or free from the first, globose or elliptical.

**2075. *Badhamia varia.*** *Mass. Mon.* 319.=*Badhamia hyalina.* *Berk. Linn. Trans.* xxi., t. 19, f. 3. *Sacc. Syll.* 1150. *Badhamia capsulifera.* *Berk. Sacc. Syll.* 1151. *Badhamia utricularis.* *Berk. Sacc. Syll.* 1149.

Sporangia more or less aggregated, sessile or stipitate, globose or obovate, grey and opaque or shining with metallic tints; stem when present generally weak and decumbent, several often more or less grown together, pale yellow or reddish, springing from a well-developed hypothallus of the same colour; capillitium variable, well developed, knots large or not very evident; spores in clusters, or free from the first, globose, minutely warted all over, dingy lilac-brown,  $9$ - $12\ \mu$  diam.

On wood, etc. Victoria. N.S.Wales. Tasmania. (Fig. 360.)



GENUS 18. **TILMADOCHÉ.** *Fr.*

Sporangia stipitate, splitting in an irregular or reticulate manner, without columella; wall of sporangia single, very delicate, weakly, but not uniformly containing deposits of lime; tubes of the capillitium at the bottom simple, forking through the whole length at a sharp angle, the rest straightened, therefore formed into a regular net; granules of lime very small, fusiform, not numerous.

**2076. *Tilmadoché nutans.*** *Pers. Rtfki. Mon. 127, f. 129. Mass. Mon. 327. Sacc. Syll. 1244.*

Sporangia lenticular, plane or concave below, usually cracked in many places, umbilicate, greyish-white, stipitate, nodding; stem of variable length, subulate, cernuous, furrowed, whitish-grey or greyish-brown; capillitium strongly developed, tubes uncoloured, containing very small irregular granules of lime; spores bright-violet, smooth, 9-10  $\mu$ .

On rotten wood, etc. Queensland. W. Australia. Tasmania. (Fig. 361.)

**2077. *Tilmadoché mutabilis.*** *Rostk. Mon. 130, f. 123-127. Mass. Mon. 329. = T. viridis. Sacc. Syll. VII., 1247.*

Sporangia globose, flattened, or lens-shaped, plane below or concave, usually cracked in many places, umbilicate, yellow, greenish yellow, or rusty orange, stipitate, nodding, splitting irregularly, or in a reticulate manner; stem variable in length, subulate, cernuous, straw-colour, yellow, scarlet, or ferruginous; capillitium coloured the same as the sporangia; tubes strongly developed, containing fusiform colourless granules of lime; spores globose, minutely warted, 9-11  $\mu$ .

On decayed wood. Queensland. W. Australia.

GENUS 19. **LEOCARPUS.** *Link.*

Sporangia irregularly splitting, with double walls; inner wall surrounding the mass of spores on all sides, and giving origin to the capillitium; outer wall thick, passing down to the stem or hypothallus. Tubes of the capillitium formed into a thick net, the greater part of the knots weakly developed, filled with air, the rest very much swollen, and changed into granules of lime.

**2078. *Leocarpus fragilis.*** *Dicks. Rtfki. Mon. 132, f. 93. Mass. Mon. 338. Sacc. Syll. 1242.*

Sporangia obovate, or somewhat roundish, sessile, or with a thin thread-like, coloured, rising stem; bright, shining, containing coloured granules of lime; spores dull violet, spinulose, 12-14  $\mu$ .

On grass, twigs, moss, etc. Tasmania. (Fig. 362.)

GENUS 20. **FULIGO.** *Hall.*

Variable in size, deformed, diversely coloured, æthaliium compounded of variously entangled vein-like sporangia, with but little cohesion; central stratum filled with spores and capillitium, outer

empty, not always developed into a cortex, containing plentiful deposits of lime ; inferior stratum joined to the pelliculose hypothallus ; capillitium strongly developed, containing angularly irregular, but not numerous, granules of lime.

**2079. *Fuligo varians*.** *Sommf. Rtfki. Mon.* 134.=*Fuligo septica*. *Sacc. Syll.* 1228.

Sporangia more or less closely interwoven, bark not always developed ; walls of sporangia usually coloured ; capillitium strongly developed, containing (not numerous) granules of lime in irregular angular masses ; spores dull-violet, smooth,  $7\frac{1}{2}$ -10  $\mu$ .

On wood, tan, soil, etc. Queensland. Tasmania. W. Australia. Victoria. (Fig. 377.)

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## ADDENDA.

*Pores ferruginous.*

- 828 bis. *Poria ruftincta*.** *Berk. & Curt. in Grev. xv., 25.*  
*Sacc. Syll. 6029.*

Effused, rather thick, firm, tawny, ferruginous bay when old, margin sterile, woolly, golden brown; pores equal, rounded, minute, punctiform.

On wood.

- 963 bis. *Kneiffia setigera*.** *Fries Hym. Eur. 628. Sacc. Syll. 7020.*

Whitish, soft; effused; setæ rather rigid, equal, hyaline, spores very minute, globose, hyaline ( $1\ \mu$  diam.).

On wood. (Fig. 75.)

GENUS 51 (p. 276). **PLATYCHEILUS.** *Cooke.*

The above name must be substituted for *Tryblidiopsis*, *Cooke*, in *Grevillea* xvi., p. 2; it being adopted previously for another genus, in the *Discomycetes*, and inadvertently overlooked.

- 1482. *Platycheilus cæspitosus*.** *Cke. & Mass.,* instead of  
*Triblidiopsis cæspitosum, C. & M.*

- 1644 bis. *Læstadia Litseæ*.** *B. & Br. = Sphærella Litseæ,*  
*B. & Br. in Herb.*

Spots irregular, or suborbicular, on the upper surface, becoming pallid in the centre, with a broad brown border. Perithecia semi-innate, black, punctiform. Asci clavate. Sporidia elongated-elliptical, continuous, hyaline ( $20-30\ \mu$  long).

On leaves of *Litseæ*. Queensland.

- 1738 bis. *Uromyces bulbinis*.** *Thum. Flora 1877, p. 410.*  
*Sacc. Syll. 2033. Uredo bulbinis. Ktch.*

Sori on both surfaces, small, densely gregarious, concentrically disposed in large circles, covered by the cuticle, firm, rather concave, brown. Teleutospores clavate or oblong-clavate, mostly rather acute at the apex, and narrowed at the base, pedicellate; epispore even, rather thick, especially at the apex,  $30-36 \times 20-22\ \mu$ .

On leaves of *Bulbine bulbosa*. Omeo, Upper Macquarie River.

- 1757. *Puccinia Castagnei*.** *Thum. Sacc. Syll. 2234. P.*  
*apii-graveolentis. Cast.*

- 1764 bis. *Puccinia callixenes*.** *Berk. in Herb.*  
*Æcidiospores—See Æcidium callixenes, B.*

Teleutospore-sori on the under surface, scattered, large, orbicular, depressed, at first covered, and afterwards surrounded by the ruptured cuticle. Teleutospores lanceolate, slightly constricted at the septum, each cell elongated, triangular,  $35-40 \times 9\ \mu$ , smooth, pale brown, seated on hyaline pedicels of equal length. Uredospores not seen.

On *Callixene*. Falkland Islands.



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## EXPLANATION OF FIGURES.

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ALL spores, sporules, sporidia, and conidia magnified 400 diameters, unless otherwise stated.

Fig.

1. *Agaricus* (*Amanita*) *vernus*, *Fr.*, with section and spores.
2. *Agaricus* (*Amanitopsis*) *illudens*, *C. & M.*, with section and spores.
3. *Agaricus* (*Lepiota*) *lavendulæ*, *C. & M.*, with section and spores.
4. *Agaricus* (*Schulzeria*) *revocans*, *C. & M.*, with section and spores.
5. *Agaricus* (*Tricholoma*) *coarctatus*, *C. & M.*, with section and spores.
6. *Agaricus* (*Clitocybe*) *myriophyllus*, *C.*, with section and spores.
7. *Agaricus* (*Collybia*) *olivaceo-albus*, *C. & M.*, with section.
8. *Agaricus* (*Mycena*) *subcorticalis*, *C.*, with section and spores.
9. *Agaricus* (*Omphalia*) *umbelliferus*, *L.*, with section.
10. *Agaricus* (*Pleurotus*) *australis*, *C. & M.*, with section.
11. *Agaricus* (*Volvaria*) *parvulus*, *Weinm.*, with section and spores.
12. *Agaricus* (*Annularia*) *insignis*, *C. & M.*, with section and spores.
13. *Agaricus* (*Pluteus*) *Wehlianus*, *C. & M.*, with section and spores.
14. *Agaricus* (*Entoloma*) *galbineus*, *C. & M.*, with section and spores.
15. *Agaricus* (*Clitopilus*) *cancrinus*, *Fries*, with section and spores.
16. *Agaricus* (*Leptonia*) *quinquecolor*, *C. & M.*, with section and spores.
17. *Agaricus* (*Nolanea*) *pascuus*, *Fries*, section with spores.
18. *Agaricus* (*Eccilia*) *rhodocylix*, *Fries*, with section.
19. *Agaricus* (*Claudopus*) *variabilis*, *Fries*, with spores.
20. *Agaricus* (*Tubaria*) *furfuraceus*, *Fries*, with section and spores.
21. *Agaricus* (*Pholiota*) *phylicigena*, *Berk.*, with section.
22. *Agaricus* (*Hebeloma*) *arenicolor*, *C. & M.*, with section and spores.
23. *Agaricus* (*Inocybe*) *gigasporus*, *C. & M.*, with section and spores.
24. *Agaricus* (*Flammula*) *hyperion*, *C. & M.*, with section and spores.

- Fig. .  
 25. *Agaricus* (*Naucoria*) *fraternus*, *C. & M.*, with section and spores.  
 26. *Agaricus* (*Galera*) *tener*, *Fries*, with section and spores.  
 27. *Agaricus* (*Crepidotus*) *phaeton*, *C. & M.*, with section and spores.  
 28. *Agaricus* (*Psalliota*) *elatior*, *C. & M.*, with section and spores.  
 29. *Agaricus* (*Stropharia*) *coronillus*, *Bull.*, with section and spores.  
 30. *Agaricus* (*Hypholoma*) *adustus*, *C. & M.*, with section and spores.  
 31. *Agaricus* (*Psilocybe*) *ceres*, *C. & M.*, with section and spores.  
 32. *Agaricus* (*Psathyra*) *fatuus*, *Fries*, with section and spores.  
 33. *Agaricus* (*Panaeolus*) *veluticeps*, *C. & M.*, with section and spores.  
 34. *Agaricus* (*Psathyrella*) *hiascens*, *Fries*, with section and spores.  
 35. *Coprinus plicatilis*, *Fries*, with section and spores.  
 36. *Bolbitius titubans*, *Fries*, with section and spores.  
 37. *Cortinarius sanguineus*, *Fries*, with section.  
 38. *Paxillus paradoxus* (*Schulz.*) *Berk.*, with section and spores.  
 39. *Hygrophorus candidus*, *C. & M.*, with section and spores.  
 40. *Lactarius piperatus*, *Fries*, with section and spores.  
 41. *Russula australiensis*, *C. & M.*, with section and spores.  
 42. *Marasmius lanaripes*, *C. & M.*, with spores.  
 43. *Cantharellus politus*, *C.*, with section and spores.  
 44. *Marasmius equicrinis*, *Muell.*, with mycelium.  
 45. *Lentinus gracilentus*, *C.*, with section and spores.  
 46. *Panus carbonarius*, *C. & M.*, with section and spores.  
 47. *Schizophyllum commune*, *Fries*, with under surface, section of gills, and spores.  
 48. *Xerotus tener*, *Berk.*, with under surface and section enlarged.  
 49. *Lenzites nivea*, *Cke.*, with section.  
 50. *Boletus lacunosus*, *C. & M.*, with section and spores.  
 51. *Strobilomyces pallescens*, *C. & M.*, with section and spores.  
 52. *Fistulina hepatica*, *Fries*, with section? and fragment of pores enlarged.  
 53. *Polyporus Hartmanni*, *Cke.*, with sections and spores.  
 54. *Polyporus tephronotus*, *Berk.*, with section.  
 55. *Polyporus spiculiferus*, *Cke.*, with section.  
 56. *Fomes australis*, *Fries*. Small specimen, with section.  
 57. *Polystictus cichoraceus*, *Berk.*, with under surface.  
 58. *Poria mollusca*, *Fries*, with section.  
 59. *Trametes heteromallus*, *Cke.*, with section.

- Fig.  
 60. *Dædalea glabrescens*, *Berk.*  
 61. *Hexagonia subtenuis*, *Berk.*, with under surface and section.  
 62. *Favolus squamiger*, *Berk.*, with under surface and section.  
 63. *Merulius Bayleyi*, *Berk.*, with under surface.  
 64. *Laschia pustulata*, *Berk.*, nat. size.  
 65. *Porothelium subtile*, *Fries*, with enlarged portion and section.  
 66. *Solenia candida*, *Pers.*, with cup enlarged and section.  
 67. *Campbellia infundibuliformis*, *U. & M.*, with section and spores.  
 68. *Tremellodon gelatinosum*, *Fries*, and section of spines.  
 69. *Hydnum crocidens*, *Cke.*, with section and spores.  
 70. *Irpex flavus* (*Jung.*), with under surface and section.  
 71. *Radulum molare*, *Fries*, with section.  
 72. *Phlebia reflexa*, *Berk.*, with under surface.  
 73. *Grandinia australis*, *Berk.*, with section enlarged.  
 74. *Odontia secernibilis*, *Berk.*, with section and tooth enlarged.  
 75. *Kneiffia setigera*, *Fries*, with teeth enlarged.  
 76. *Cladoderris australica*, *Berk.*, with under surface.  
 77. *Craterellus multiplex*, *Cke.*  
 78. *Thelephora congesta*, *Berk.*, with spores.  
 79. *Lachnocladium flagelliforme*, *Berk.*  
 80. *Stereum pusillum*, *Berk.*  
 81. *Hymenochaete phæa*, *Berk.*, with setæ of hymenium magnified.  
 82. *Peniophora papyrina*, *Mont.*, with portion of hymenium magnified.  
 83. *Aleurodiscus albidus*, *C. & M.*, with section and spores.  
 84. *Corticium sulphurellum*, *Mass.*, with section and spores.  
 85. *Coniophora luteo-cincta*, *Berk.*, with spores.  
 86. *Clavaria formosa*, *Pers.*, portion of large cluster.  
 86 bis. *Cyphella villosa*, *Fries*, with cups and section enlarged.  
 87. *Clavaria aurantia*, *Cke.*  
 88. *Calocera digitata*, *C. & Mass.*  
 89. *Auricularia albicans*, *Berk.*, with section.  
 90. *Hirneola polytricha*, *Mont.*  
 91. *Exidia glandulosa*, *Fries*, with section and spores.  
 92. *Ulocolla foliacea*, *Fries*, with spores.  
 93. *Tremella mesenterica*, *Fries*, with basidia.  
 94. *Seismosarca hydrophora*, *Cke.*, portion of hymenium and spicules magnified.  
 95. *Dacryomyces deliquescent*, *Fries*, with spores.  
 96. *Guepinia pezizæformis*, *Berk.*, with spores.  
 97. *Dictyophallus merulinus*, *Berk.*, with section.  
 98. *Ithyphallus novæ-hollandiæ*, *Corda.*  
 99. *Mutinus papuasius*, *Kalch.*, with section.  
 100. *Clathrus cibarius*, *Tul.*

- Fig.  
 101. *Colus hirudinosus*, *C. & S.*  
 102. *Lysurus australiensis*, *C. & M.*, with section.  
 103. *Anthurus Muellerianus*, *Kalch.*  
 104. *Aseröe rubra*, *Labill.*  
 105. *Cyathus fimicola*, *Berk.*, with peridium enlarged and spores magnified.  
 106. *Crucibulum vulgare*, *Tul.*, with spores.  
 107. *Sphærobolus stellatus*, *Tode*, with ejected sporangium.  
 108. *Secotium erythrocephalum*, *Tul.*, with section and spores.  
 109. *Chainoderma Drummondi*, *Mass.*, with section and spores.  
 110. *Cycloderma platyspora*, *C. & M.*, with section.  
 111. *Mesophellia arenaria*, *Berk.*, with section.  
 112. *Podaxis indica*, *Spr.*, with section, threads, and spores.  
 113. *Tylostoma maximum*, *C. & M.*  
 114. *Battarea phalloides*, *Dicks*, with elater and spores.  
 115. *Calostoma fusca*, *Berk.*, with spores.  
 116. *Geaster Readeri*, *C. & M.*, with threads and spores.  
 117. *Diploderma glauca*, *C. & M.*, with section and spores.  
 118. *Bovista olivacea*, *C. & M.*, with spores.  
 119. *Lycoperdon violascens*, *C. & M.*, with section, threads, and spores.  
 120. *Scleroderma umbrina*, *Mass.*, with section and spores.  
 121. *Mycenastrum corium*, *Desv.*, with portion of thread and spores.  
 122. *Castoreum radicatum*, *C. & M.*, with section, threads, and spores.  
 123. *Xylopodium ochroleucum*, *C. & M.*, with thread and spores.  
 124. Section of *Polysaccum confusum*, *C. & M.*  
 125. *Paurocotylis pila*, *Berk.*, with spores.  
 126. *Octaviania australiense*, *Berk.*, with spores.  
 127. *Rhizopogon luteolus*, *Tul.*, with spores.  
 128. *Hymenogaster Moselei*, *Berk.*, with spores.  
 129. *Hydnangium brisbanensis*, *Berk.*, with spores.  
 130. *Gautieria Drummondi*, *Berk.*, with spores.  
 131. *Agaricus (Metraria) insignis*, *C. & M.*, with section and spores.  
 132. *Elaphomyces Leveillei*, *Tul.*, with section, ascus, and sporidia.  
 133. *Endogone australis*, *Berk.*, with section and spore-bodies?  
 134. *Protoglossum luteum*, *Mass.*, with section, basidia, and spores.  
 135. *Gymnoglossum stipitatum*, *Mass.*, with section and spores.  
 136. *Cora æruginea*, *Nees*, with section.  
 137. *Arachnion album*, *Schwz.*, with section, peridiolum, and spores.  
 138. *Cyttaria Gunnii*, *Berk.*, with section, ascus, and sporidia.  
 139. *Morchella conica*, *Pers.*, with section, ascus, and sporidia.  
 140. *Helvella monachella*, *Scop.*, with sporidia.

Fig.

141. *Mitrula vinosa*, *Berk.*, with sporidia.
142. *Leotia lubrica*, *Pers.*, with section, ascus, and sporidia.
143. *Geoglossum australe*, *Berk.*, with spore.
144. *Geopyxis aluticolor*, *Berk.*, with section and sporidia.
145. *Peziza Drummondii*, *Berk.*, with section and sporidia.
146. *Geoscypha saccardiana*, *Cke.*, with section and sporidia.
147. *Otidea hirneoloides*, *Berk.* Cup, section, and sporidia.
148. *Discina lumbricalis*, *Cooke.* Cup, section, and sporidia.
149. *Pyronema omphalodes*, *Bull.* Cups, natural size, cup and section enlarged, ascus and sporidia.
150. *Humaria carbonigena*, *Berk.* Cups, natural size and enlarged, with sporidia.
151. *Phillipsia subpurpurea*, *B. & Br.* Cup with section and sporidia.
152. *Sarcoscypha rhenana*, *Fckl.* Cup with section, external hair, tip of paraphysis and sporidium.
153. *Trichoscypha Hindsii*, *Berk.* Cup and section, with compound tooth and sporidia.
154. *Sepultaria vinoso-brunnea*, *Berk.* Cups with section and sporidia.
155. *Scutellinia margaritacea*, *Berk.* Cup with section, external hair, and sporidia.
156. *Ciboria firma*, *Pers.* Cup with section and sporidia.
157. *Helotium citrinum*, *Hedw.* Cups, in situ, with cup and section, and sporidia.
158. *Chlorosplenium æruginosum*, *Tul.* Cup with section.
159. *Phialea Berggrenii*, *Cooke.* Cups with section and sporidia.
160. *Mollisia cinerea*, *Batsch.* Cups, natural size, with cup and section enlarged, and sporidia.
161. *Orbilia chrysocoma*, *Bull.* Cups and section.
162. *Tapesia epitaphra*, *Berk.* Cup and tapesium with sporidia.
163. *Dasyscypha glabrescens*, *C. & P.* Cup and section with sporidia.
164. *Ascobolus Phillipsii*, *Berk.*, with cups, natural size, cup and section enlarged, ascus sporidia and paraphyses.
165. *Urnula campylospora*, *Berk.* Cup with section and sporidia.
166. *Ombrophila radicata*, *Phil.* Cup and section.
167. *Ombrophila australis*, *Phil.* Cup and section with sporidia.
168. *Stictis emarginata*, *C. & M.* Cups with section and sporidia.
169. *Coccomyces delta*, *Kunze.* Cup enlarged with sporidia.
170. *Patinella Adamsoni*, *Berk.* Cups natural size, with section enlarged, and sporidia.
171. *Karschia lignyota*, *Fries.* Cup and section enlarged, with ascus sporidia and paraphyses.

Fig.

172. *Exoascus deformans*, *Berk.* Section of leaf with ascus and sporidia.
173. *Humaria Thozetii*, *Berk.* Cups, with ascus and sporidia.
174. *Pseudopeziza medicaginis*, *Desm.* On leaf with cup enlarged, section, ascus and sporidia.
175. *Coryne sarcoides*, *Jacq.* Cup and section with sporidia.
176. *Peziza australica*, *Cooke.* Cup natural size.
177. *Ailographum eucalypti*, *Cooke.* Portion of leaf with fungus in situ, perithecia enlarged, with ascus and sporidia.
178. *Glonium tardum*, *Berk.* Leaf with fungus, perithecia enlarged, and ascus with sporidia.
179. *Lembosia* sp. Habit of fungus, with ascus and sporidia.
180. *Hysterium pulicare*, *Pers.* Fungus, natural size, perithecia enlarged, with section, ascus and sporidia.
181. *Triblidiella rufula*, *Spr.* Fungus, nat. size, with perithecia enlarged, ascus, and sporidia.
182. *Triblidiopsis cæspitosum* (*Platycheilus cæspitosus*), *Cooke.* Clumps of fungus, nat. size, and enlarged, with sections, ascus, and sporidia.
183. *Hysterographium hiascens*, *Rehm.* Fungi, nat. size, perithecia enlarged, with ascus and sporidia.
184. *Cordyceps Gunnii*, *Berk.* Fungus, nat. size, portion of section enlarged, and sporidium.
185. *Epichlœ cinerea*, *Berk.* Complete fungus, n.s., with section enlarged, and sporidium.
186. *Hypocrea citrina*, *Pers.* Fungus, n.s., with portion and section enlarged, ascus and sporidia.
187. *Hypocrella discoidea*, *B. & Br.* Two discs, n.s., section enlarged, with sporidia.
188. *Hymomyces chrysospermus*, *Tul.* Portion of *Boletus*, with parasite, perithecia and section enlarged, conidia, ascus, and sporidia.
189. *Sphærostilbe microspora*, *C. & M.* Conidiophores and perithecium enlarged, with section, ascus and sporidia.
190. *Polystigma australiense*, *Sacc.* Leaf with fungus, section of perithecium enlarged, ascus and sporidia.
191. *Nectria coccinea*, *Fries.* Cluster of perithecia, n.s., section of perithecium enlarged, ascus and sporidia.
192. *Nectria Tasmanica*, *Berk.* Cluster of perithecia enlarged, with section, ascus and sporidia.
193. *Dialonectria quisquilaris*, *Cooke.* Perithecia on wood, n.s., perithecia enlarged, with section, ascus and sporidia.
194. *Gibberella passifloræ*, *C. & M.* Perithecia on twig, n.s., and perithecium enlarged, ascus and sporidia.
195. *Melanospora caprina*, *Fries.* Perithecia on wood, n.s., perithecium enlarged, with sporidia.
196. *Sarcoxydon compunctum*, *Jungh.* Section of stroma, n.s., ascus and sporidia.



- Fig.  
 197. *Xylaria allantoidea*, Berk. Stroma, n.s., with section, ascus and sporidia.  
 198. *Poronia œdipus*, Mont. Stroma, n.s., section of capitulum enlarged; sporidia magnified.  
 199. *Rhopalopsis angolense*, W. & C. Two fungi, n.s., with sporidia.  
 200. *Ustulina vulgaris*, Tul. Portion of stroma, n.s., with section and sporidia.  
 201. *Nummularia exutans*, Cooke. Three stromata on bark, n.s., with section, ascus and sporidia.  
 202. *Daldinia concentrica*, Bolt. Stroma with section, n.s., and sporidia.  
 203. *Hypoxylon coccineum*, Bull. Stromata on bark, n.s., with section and sporidia.  
 204. *Phyllachora alpinæ*, Cooke. Portion of leaf with fungus, n.s., section of stroma, ascus and sporidia.  
 205. *Dothidella inæqualis*, Cooke. Portion of leaf with fungus, n.s., section enlarged, and sporidia.  
 206. *Coccodea globulosa*, C. & M. Portion of leaf with fungus, n.s., section of stroma enlarged, and sporidia.  
 207. *Bagnisiella rugulosa*, Cooke. Portion of leaf with fungus, n.s., section enlarged, and sporidia.  
 208. *Montagnella rugulosa*, Cooke. Portion of leaf with fungus, n.s., section of stroma enlarged, ascus and sporidia.  
 209. *Trabutia eucalypti*, C. & M. Portion of leaf with fungus, n.s., and sporidia.  
 210. *Parodiella grammodes*, Kunze. Portion of leaf with fungus, n.s., with section, ascus and sporidia.  
 211. *Rhytisma hypoxanthum*, B. & Br. Portion of leaf with fungus, n.s., section and sporules.  
 212. *Melogramma rubricosa*, Fries. Piece of bark with fungus, n.s., section of stroma enlarged, and sporidia.  
 213. *Diatrype glomeraria*, Berk. Fungus on twig, n.s., pustule and section enlarged, with sporidia.  
 214. *Valsa echidna*, Cooke. Pustule with section enlarged, asci and sporidia.  
 215. *Cryptovalsa elevata*, Berk. Fungus on bark, n.s., with ascus and sporidia.  
 216. *Eutypa lata*, Tul. Piece of wood with the fungus, n.s., section enlarged, ascus and sporidia.  
 217. *Gibberidea Archeri*, Berk. Cluster of perithecia on wood, with section enlarged, and sporidia.  
 218. *Cucurbitaria* (*Melanomma*) *plagia*, C. & M. Fungus on bark, with portion of pustule enlarged, and sporidia.  
 219. *Byssosphæria aquila*, Fries. Six perithecia on subiculum, n.s., perithecium enlarged, with sporidia.  
 220. *Lasiosphæria larvæspora*, C. & M. Perithecia scattered on wood, n.s., also enlarged, with sporidium.

Fig.

221. *Coniochæta pulvinula*, *Berk.* Perithecia scattered on wood, n.s., one enlarged, with ascus and sporidia.
222. *Venturia circinans*, *Fries.* Portion of leaf with fungus, perithecium enlarged, ascus and sporidia.
223. *Chaetomium cymatotrichum*, *Cooke.* Perithecia scattered on fragment of leaf, n.s., perithecium enlarged, one of the hairs magnified, with sporidia.
224. *Rosellinia tremellæcola*, *C. & M.* Perithecia on *Tremella*, n.s., and enlarged with sporidia.
225. *Conisphæria australica*, *C. & M.* Perithecia on wood, with section enlarged and sporidia.
226. *Anthostomella lepidospermæ*, *Cooke.* Clusters on leaf, n.s., with ascus and sporidia.
227. *Zignoia subcorticalis*, *Cooke.* Perithecia scattered, n.s., section enlarged, part of ascus and sporidia.
228. *Massaria australis*, *Cooke.* Perithecia scattered on twig, n.s., section enlarged, with ascus and sporidia.
229. *Plæospora herbarum*, *Rabh.* Perithecia on herb stem, n.s., section enlarged, with sporidium.
230. *Physalospora phyllodiæ*, *C. & M.* Portion of leaf with perithecia, n.s., section enlarged, ascus and sporidia.
231. *Didymella bryoniæ*, *Fckl.* Perithecia on stem, n.s., section enlarged, with sporidia.
232. *Didymosphæria banksiæ*, *Cooke.* Portion of leaf with clusters, cluster of perithecia enlarged, ascus and sporidia.
233. *Læstadia destructiva*, *B. & Br.* Leaf with fungus, n.s., ascus and sporidia.
234. *Sphærella cryptica*, *Cooke.* Portion of leaf with clusters of perithecia, n.s., section of perithecium, ascus and sporidia.
235. *Leptosphærella camelliæ*, *C. & M.* Portion of leaf with perithecia, n.s., with ascus and sporidia.
236. *Micropeltis applanata*, *Mont.* Portion of leaf with scattered perithecia, n.s., and free sporidia.
237. *Microthyrium amygdalinum*, *C. & M.* Portion of leaf with perithecia, n.s., perithecium enlarged, with sporidia.
238. *Erysiphe vitigera*, *C. & M.* Perithecium with appendages enlarged, asci and sporidia.
239. *Sphærotheca pannosa*, *Lev.* Perithecium with appendages enlarged, ascus and sporidia.
240. *Eurotium herbariorum*, *Link.* Perithecium enlarged, with sporidia.
241. *Asterina correicola*, *C. & M.* Portion of leaf with fungus, n.s., cluster enlarged, perithecium further enlarged and sporidia.
242. *Corynelia uberata*, *Fries.* Leaf with two clusters, n.s., perithecia enlarged, with sporidia.

- Fig.  
 243. *Dimerosporium parvulum*, *Cooke*. Portion of leaf with clusters, n.s., perithecium enlarged, ascus and sporidia.  
 244. *Meliola densa*, *Cooke*. Portion of leaf with patches of fungus, n.s., perithecium enlarged, appendage further enlarged, ascus and sporidia.  
 245. *Capnodium citri*, *B. & D.* Perithecium enlarged.  
 246. *Antennaria scoriadea*, *Berk.* Portion of thread, with perithecium enlarged.  
 247. *Mucor mucedo*, *Linn.* Tuft of mucor enlarged, head with columella and spores magnified, and zygospor.   
 248. *Phycomyces nitens*, *Kunze*. Columella enlarged, spores, and zygospor.   
 249. *Circinella umbellata*, *T. & M.* Capitulum enlarged, with globular head further magnified.  
 250. *Spinellus gigasporus*, *C. & M.* Columella and zygospor., with spores.  
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## ERRATA.

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- p. 2, l. 17, for "*Fl.*" read "*Pl.*"  
p. 6, l. 32, delete comma after "homogeneous."  
p. 12, l. 39, for "*SERICELLA*," read "*SERICELLI*."  
p. 17, l. 15, for "*canaliculata*," read "*canaliculatus*."  
p. 37, l. 29, add "Fig. 131."  
p. 158, l. 23, for "*ochroleucus*," read "*ochroleuca*."  
p. 185, l. 11, for "*fascistum*," read "*fasciatum*."  
p. 262, l. 29, for "*erinaceus*," read "*erinacea*."  
p. 312, l. 22, delete "*Sphæria Litsiæ. B. & Br.*"  
p. 326, l. 26, for "*Wadh.*" read "*Waldh.*"  
p. 330, l. 1, for "*Brougn.*" read "*Brongn.*"  
p. 335, l. 18, for "*Desp.*" read "*Disp.*"  
p. 363, l. 39, between "*G.*" and "*lagenarium*," insert full stop.







HYMENOMYCETES.







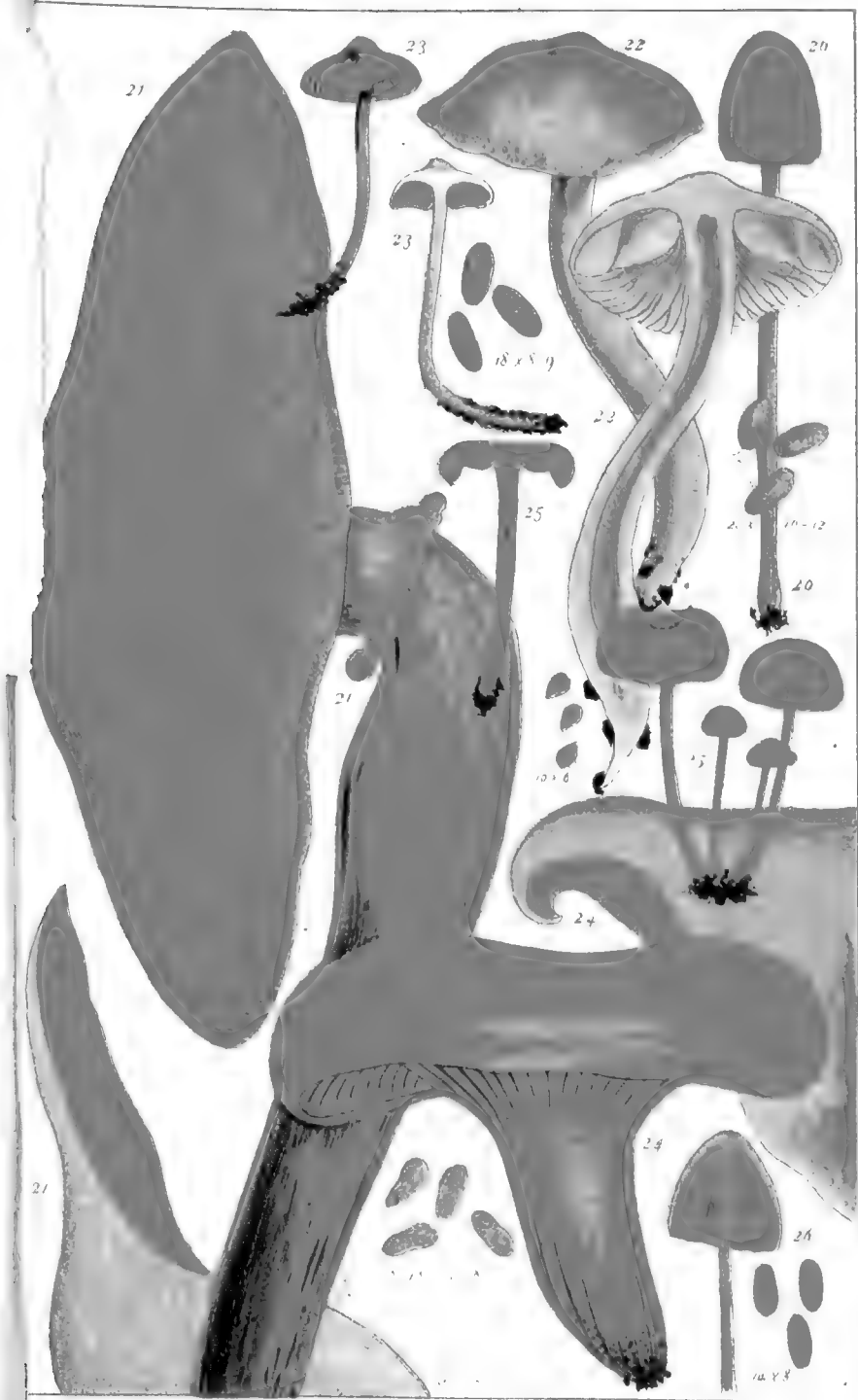
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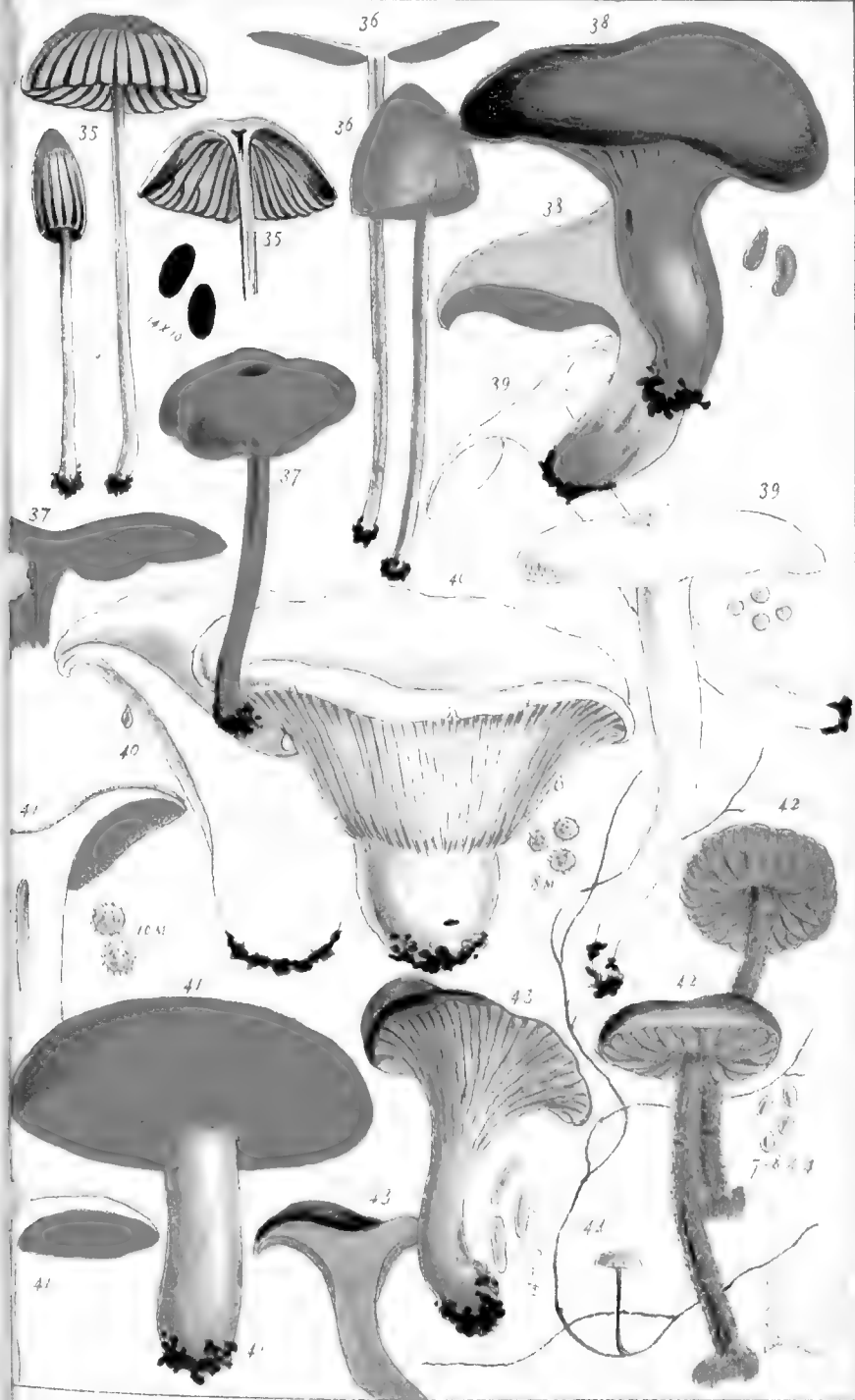
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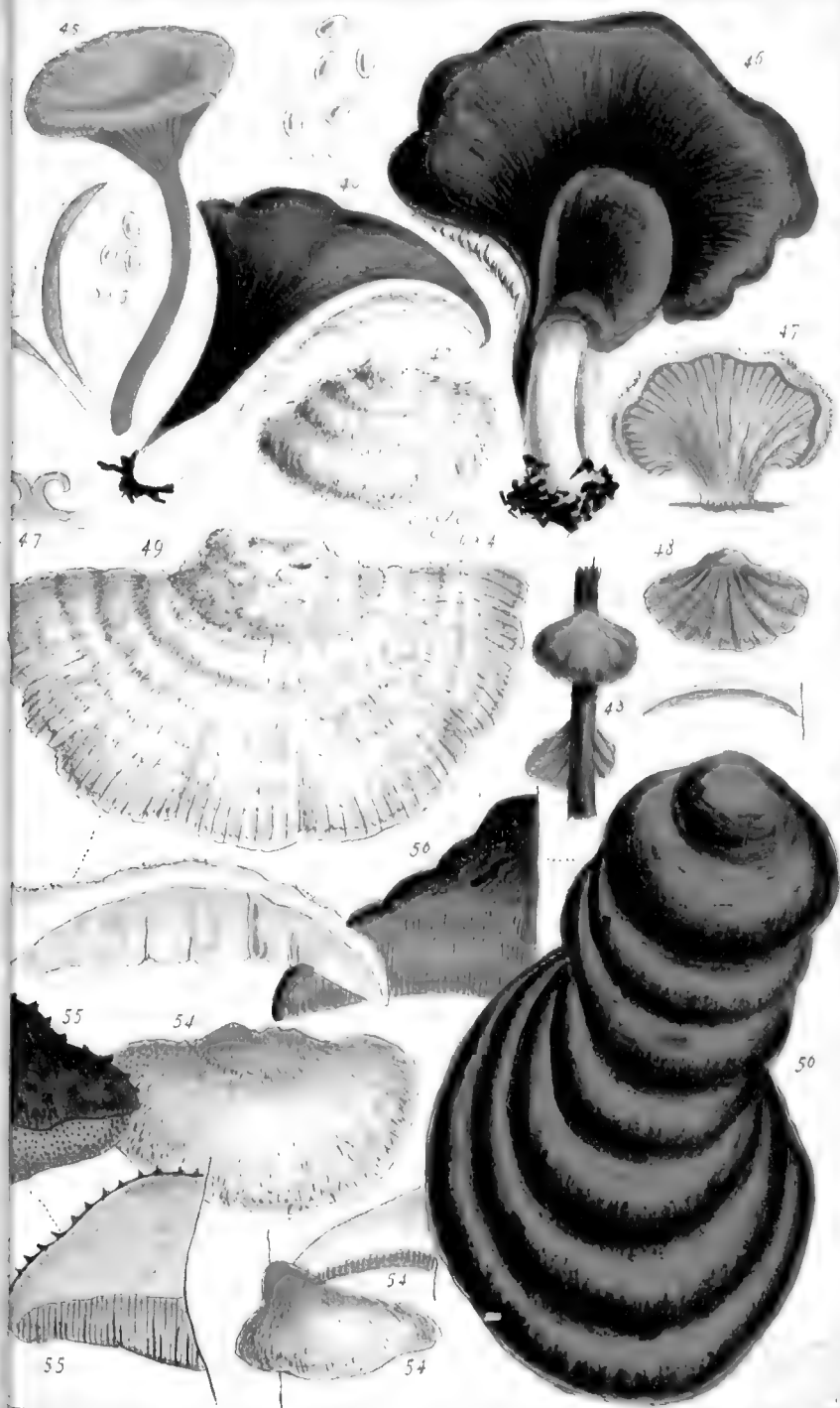




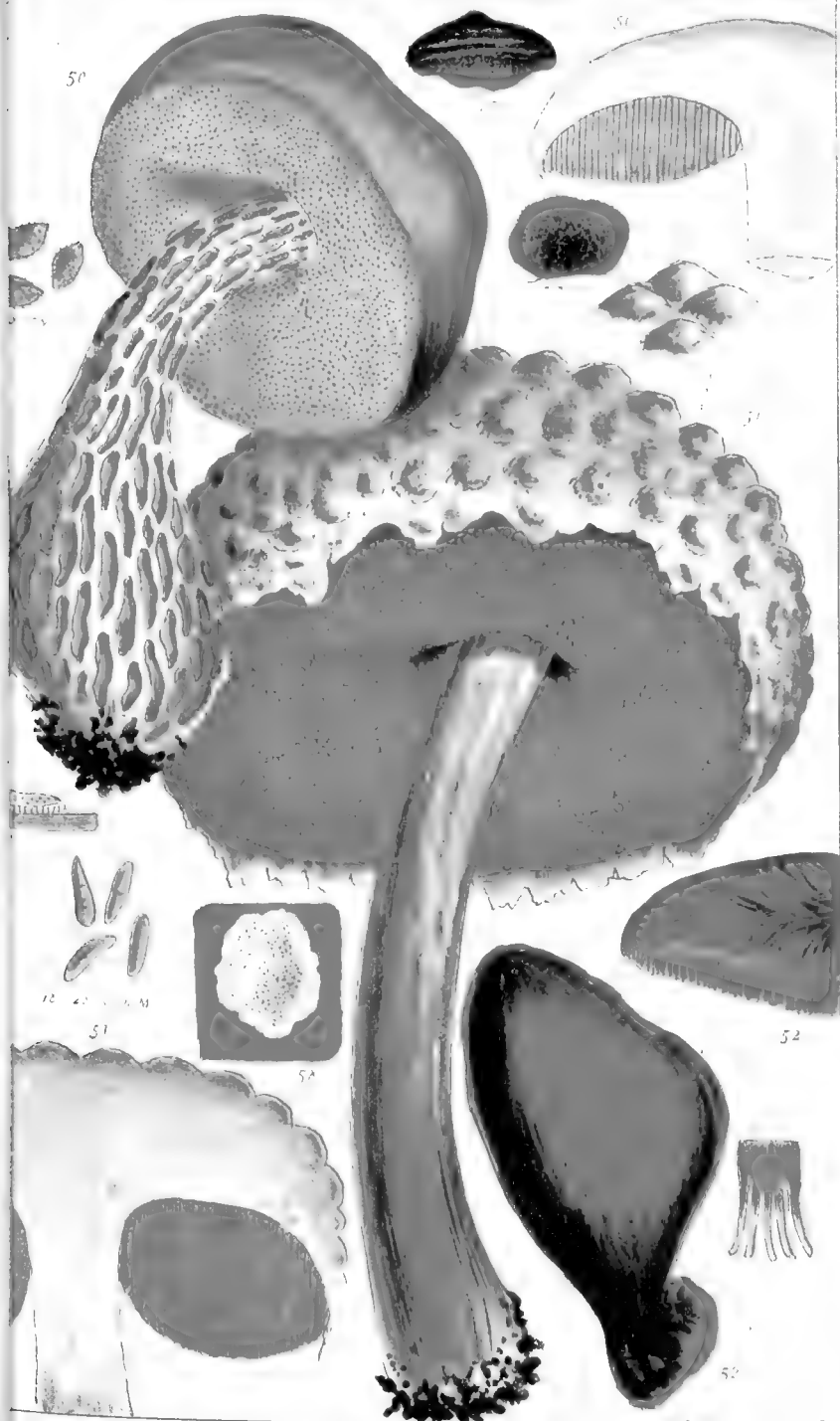












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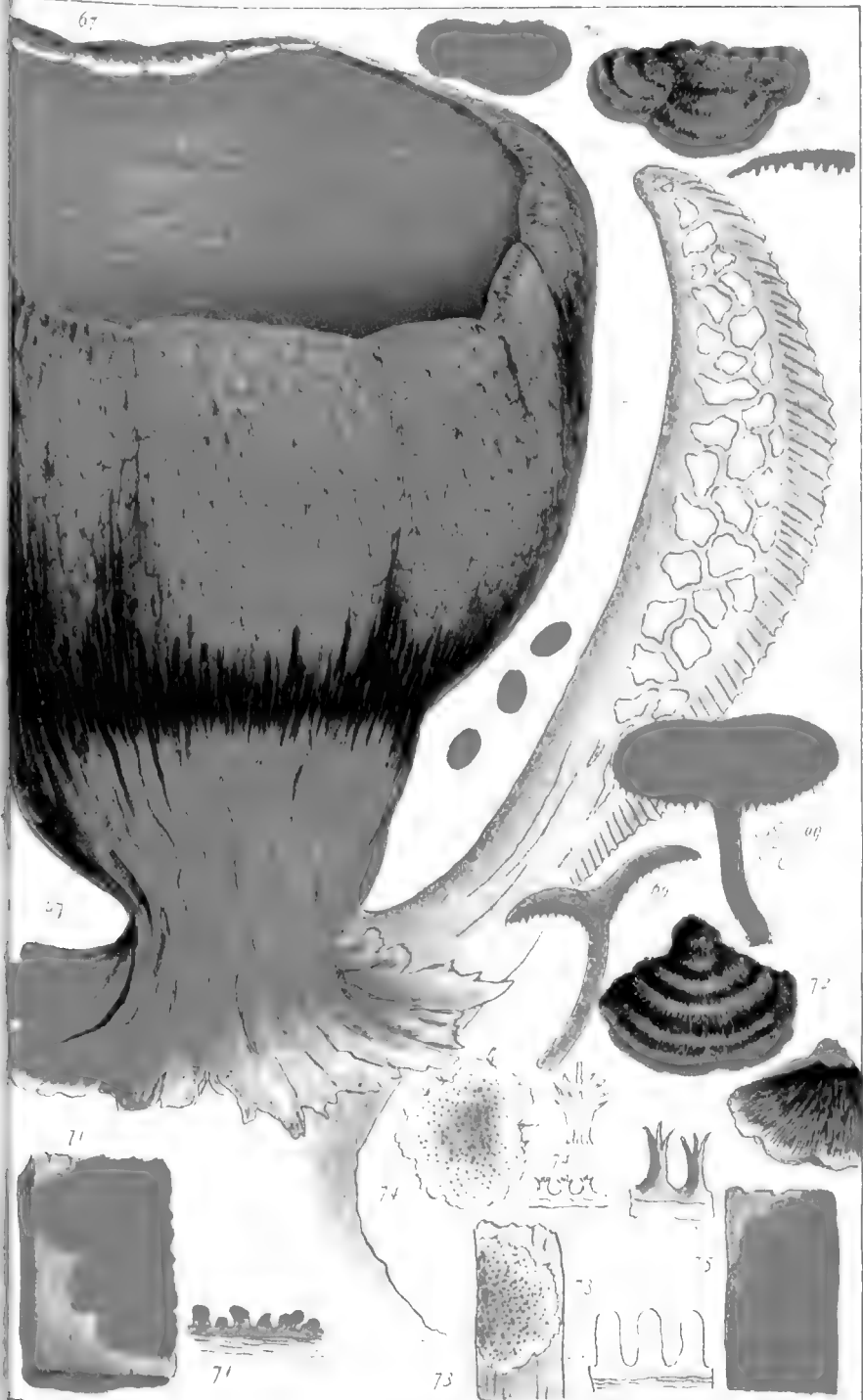




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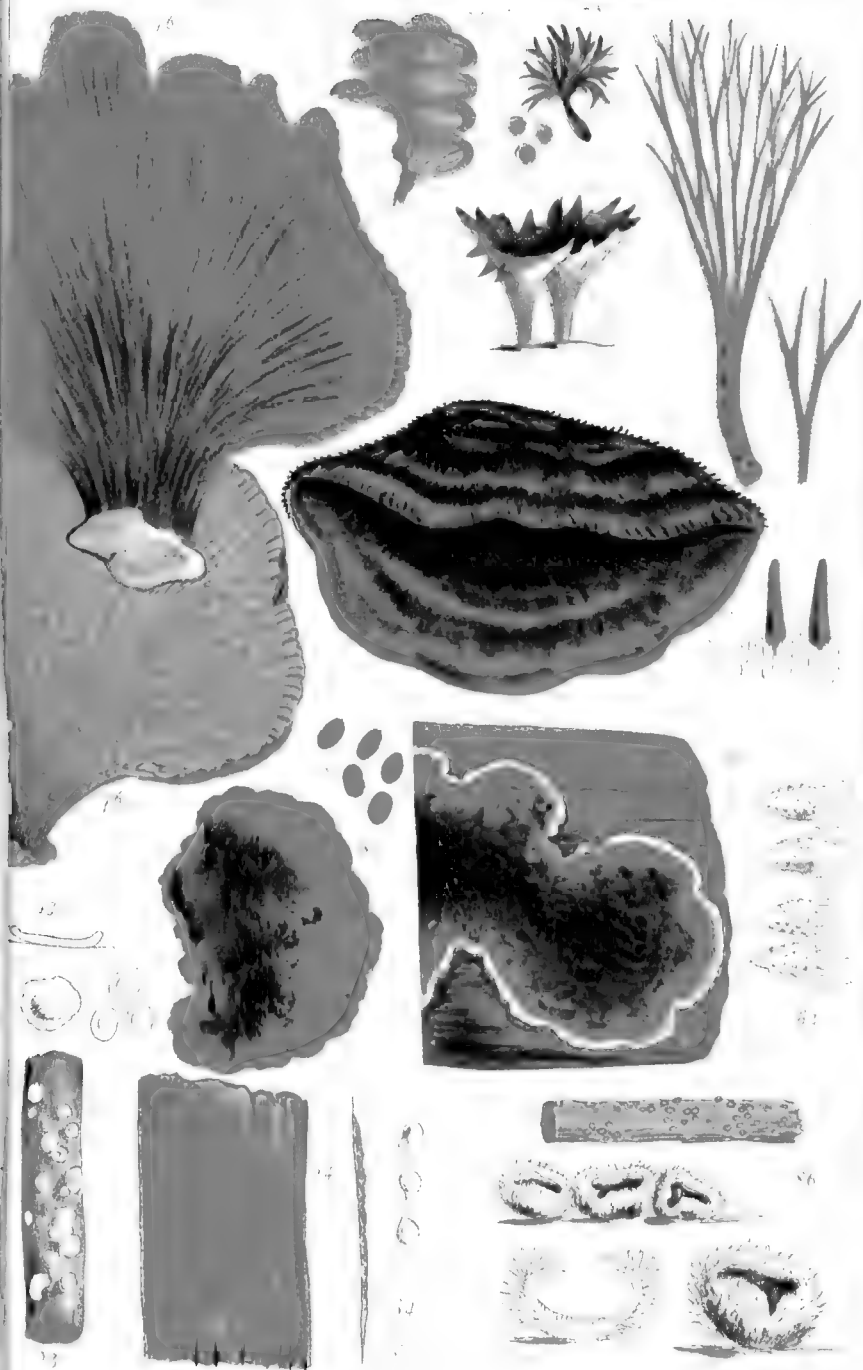




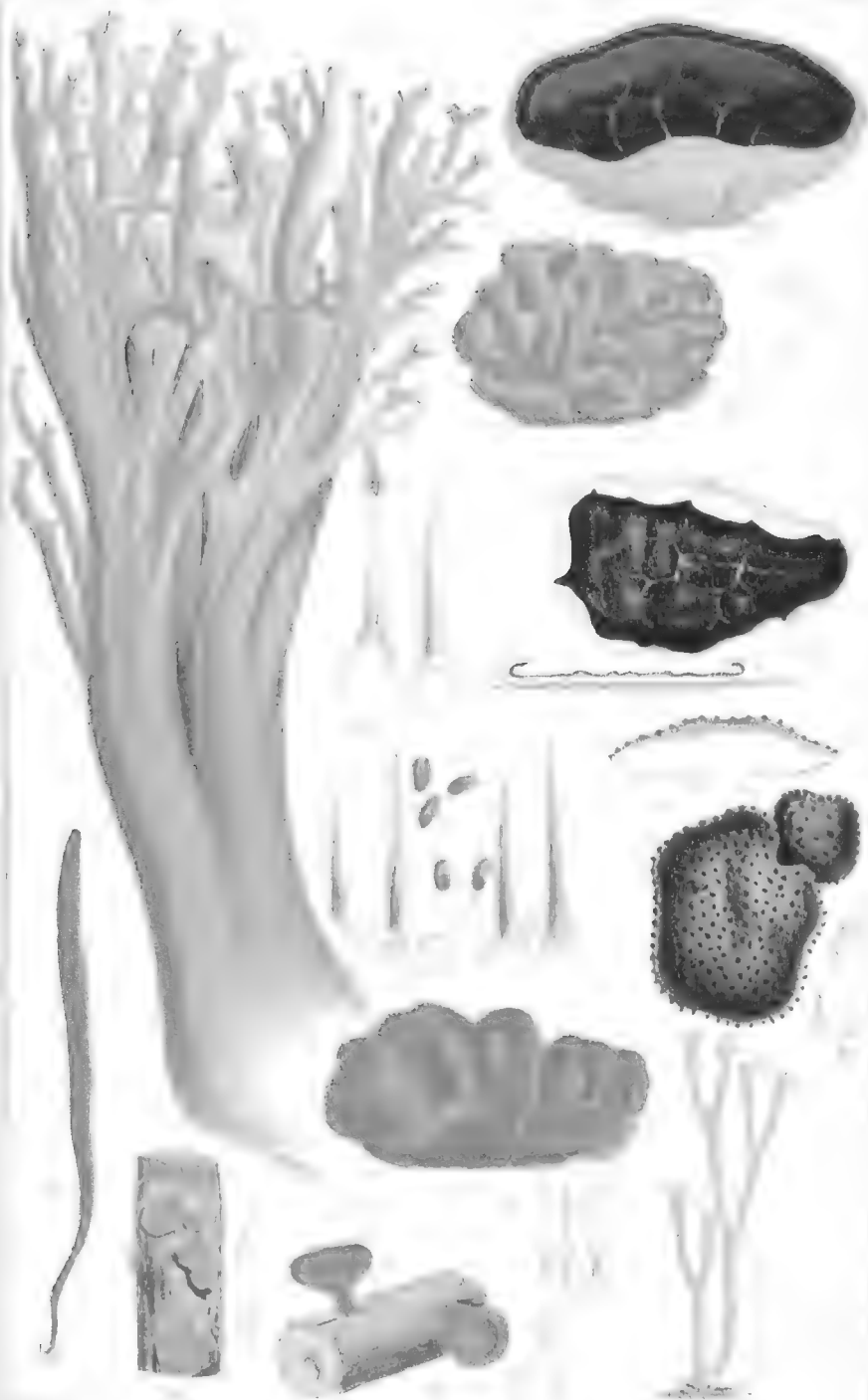


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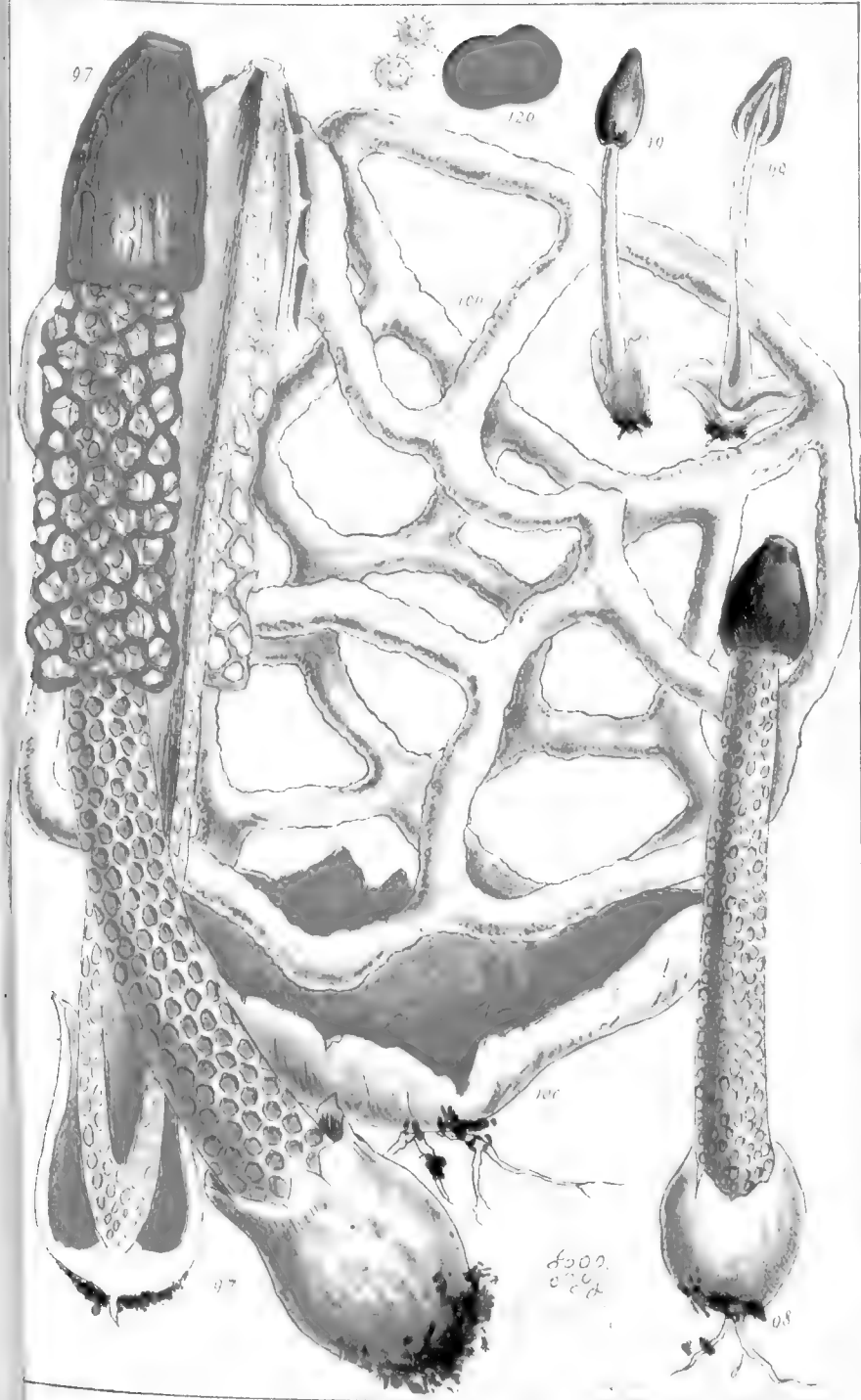






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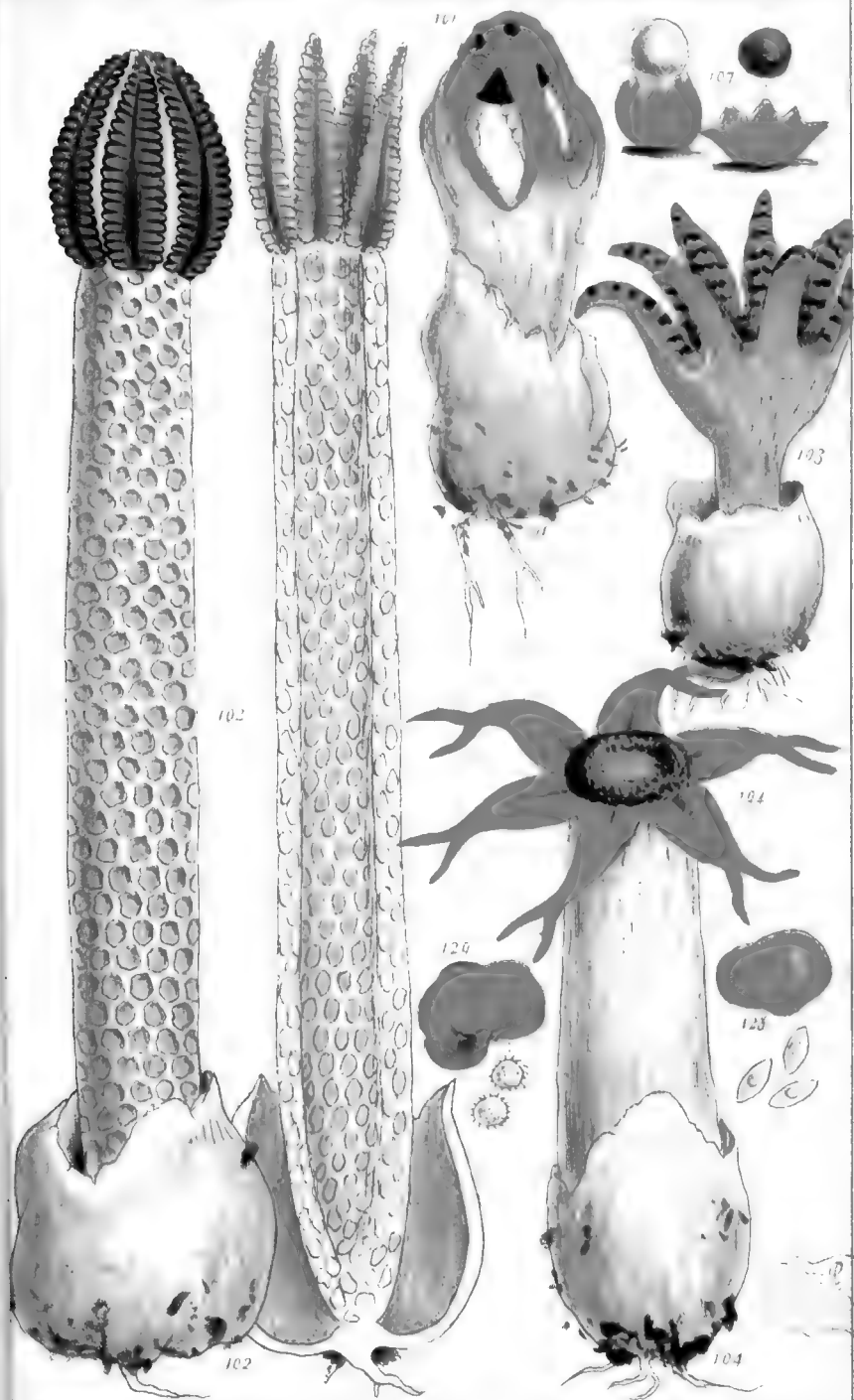




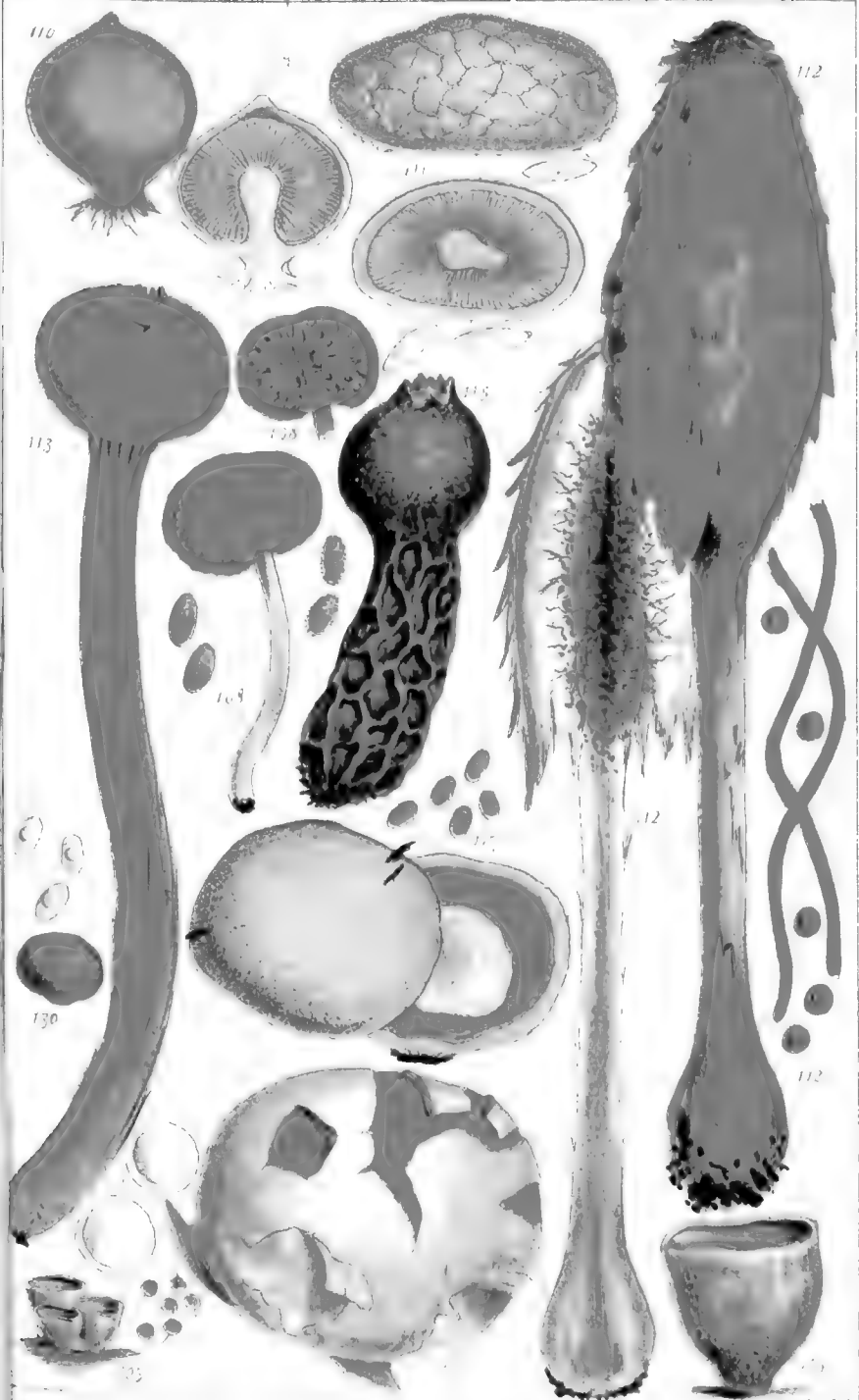
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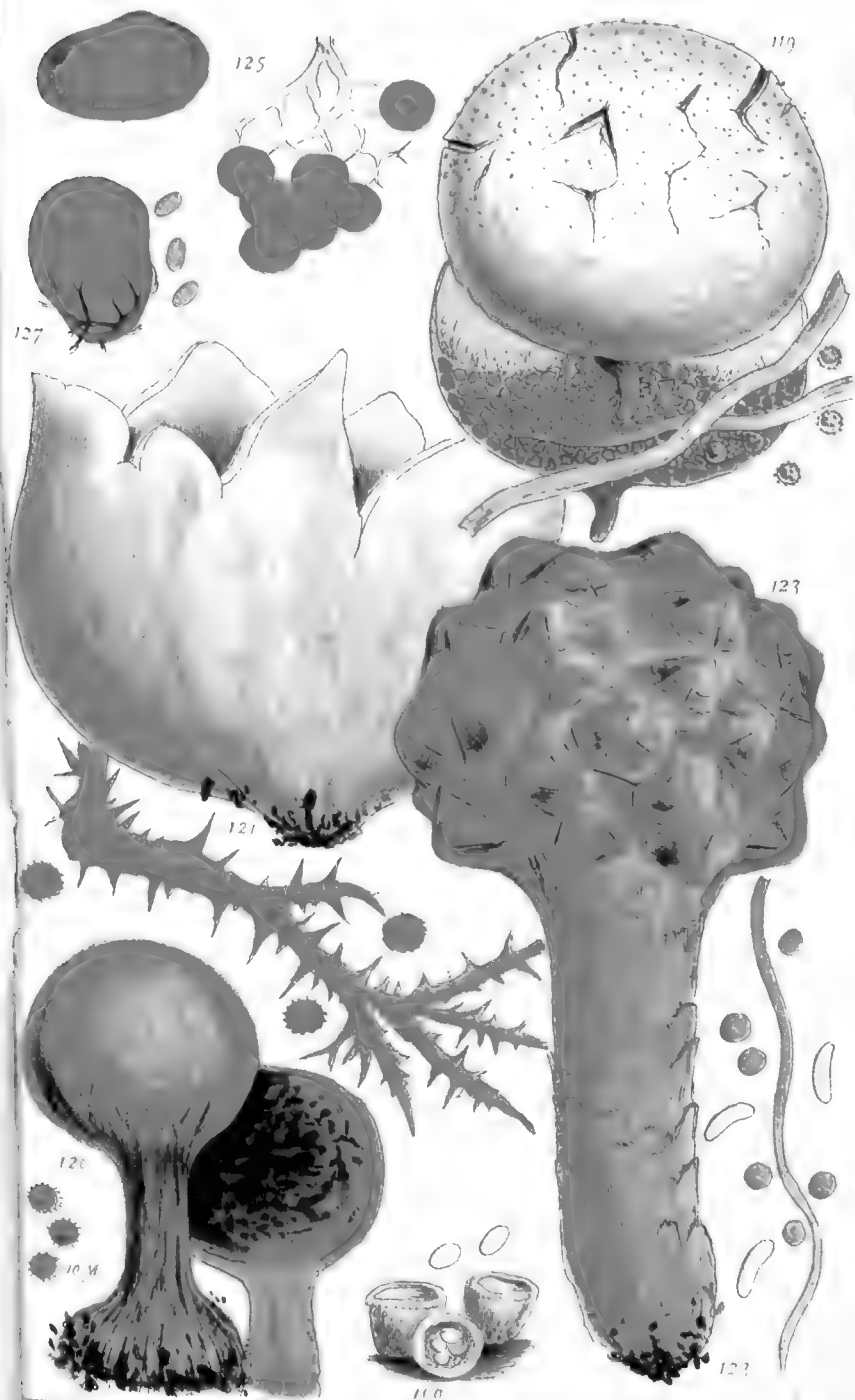


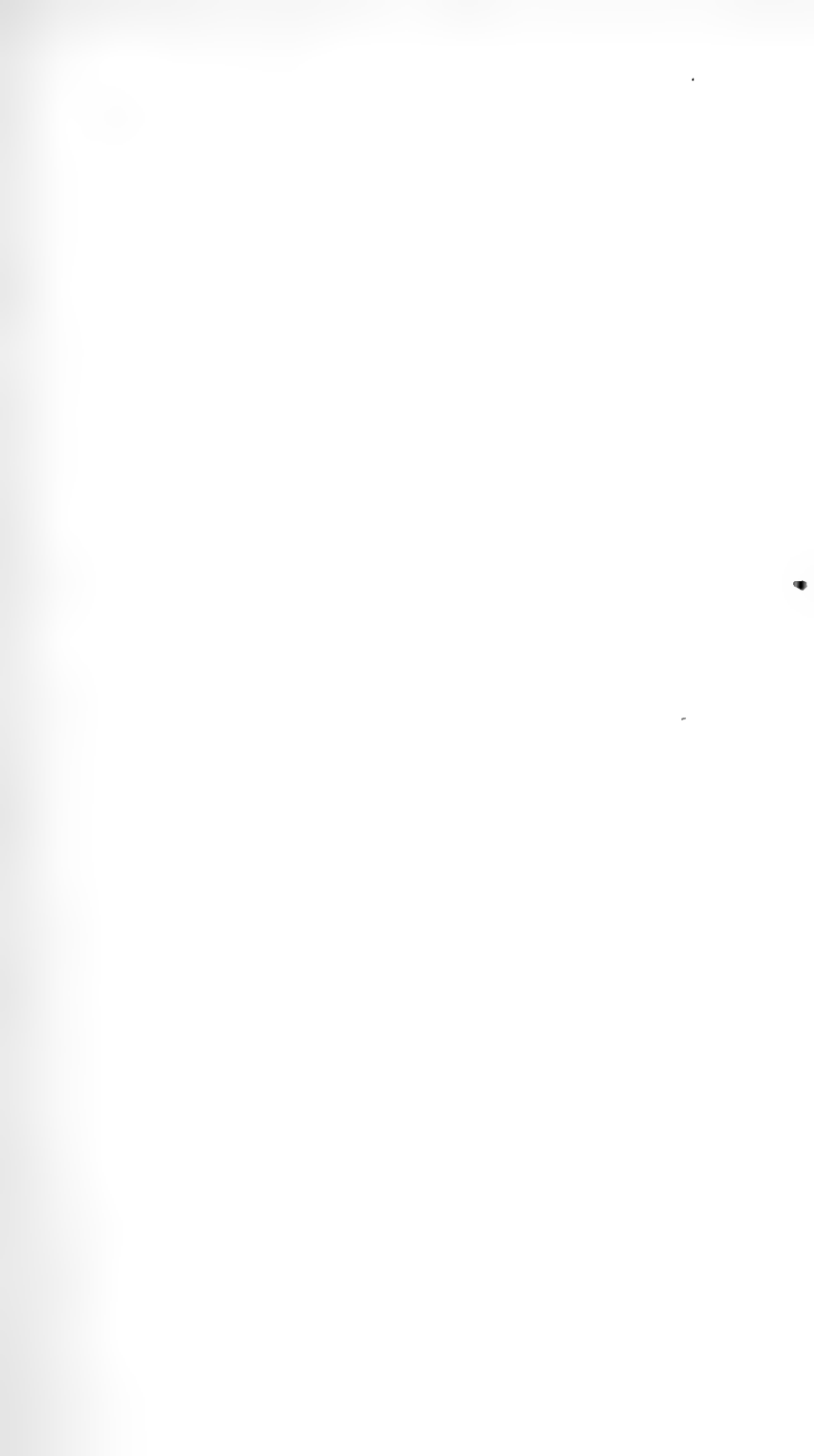


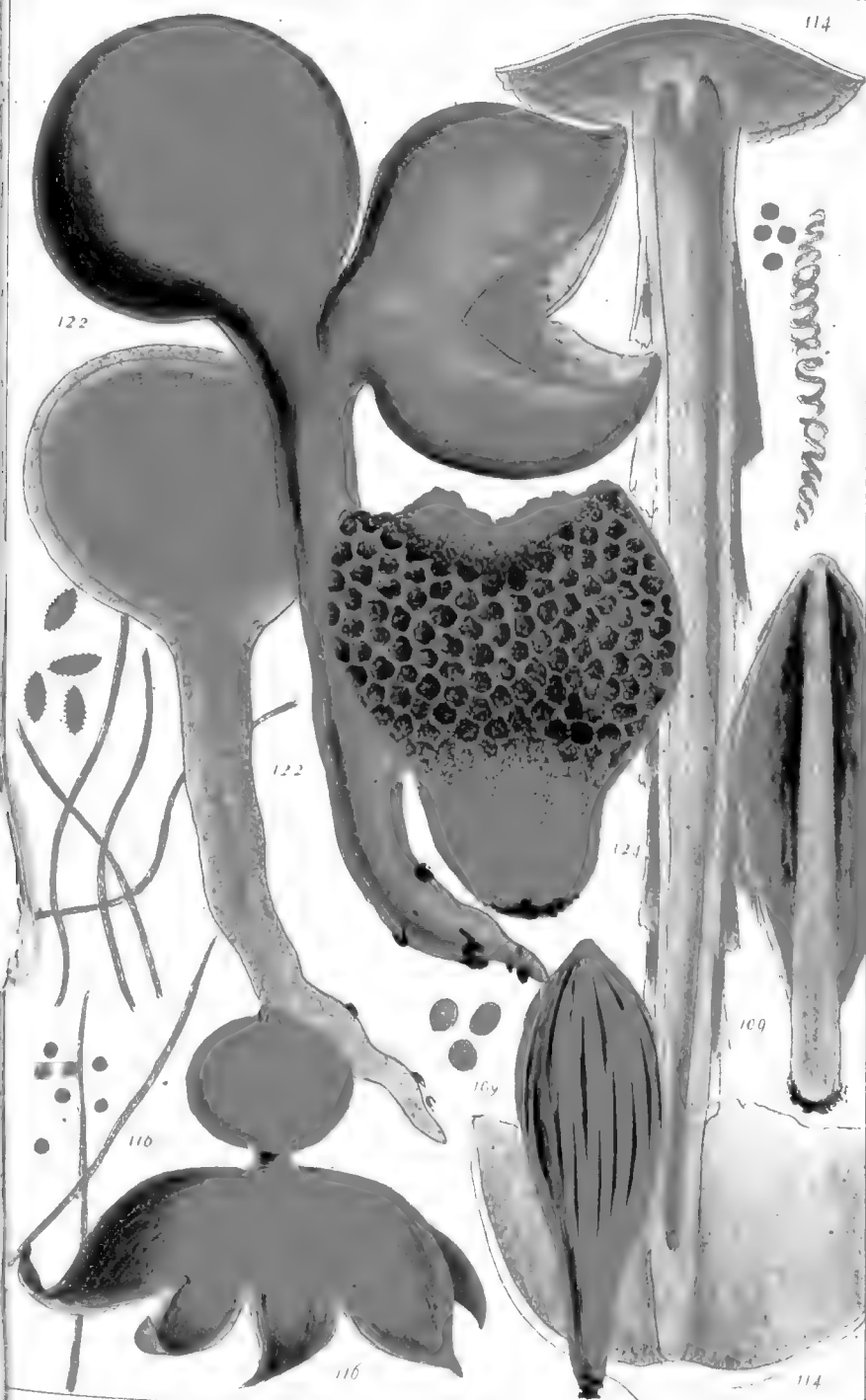






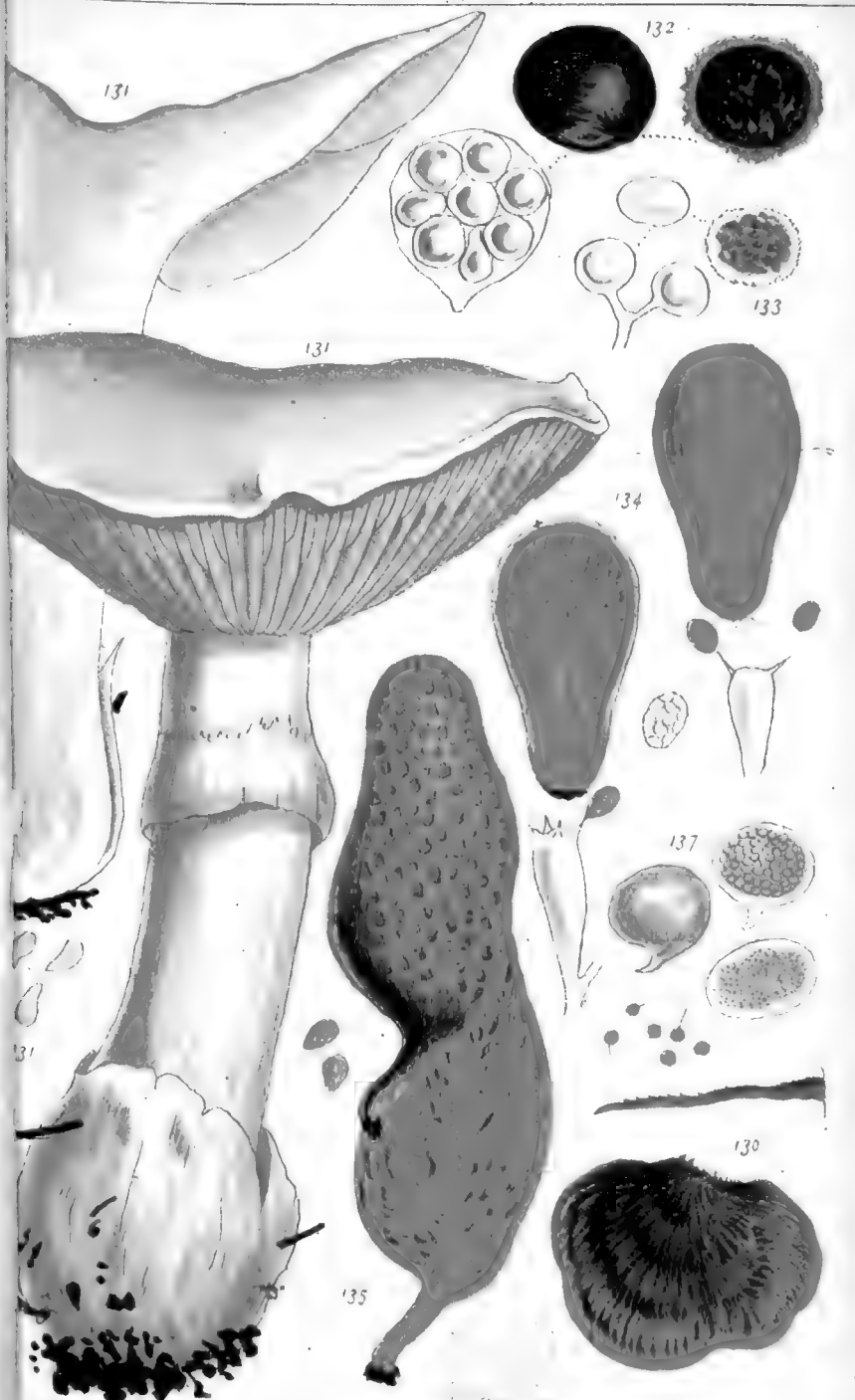




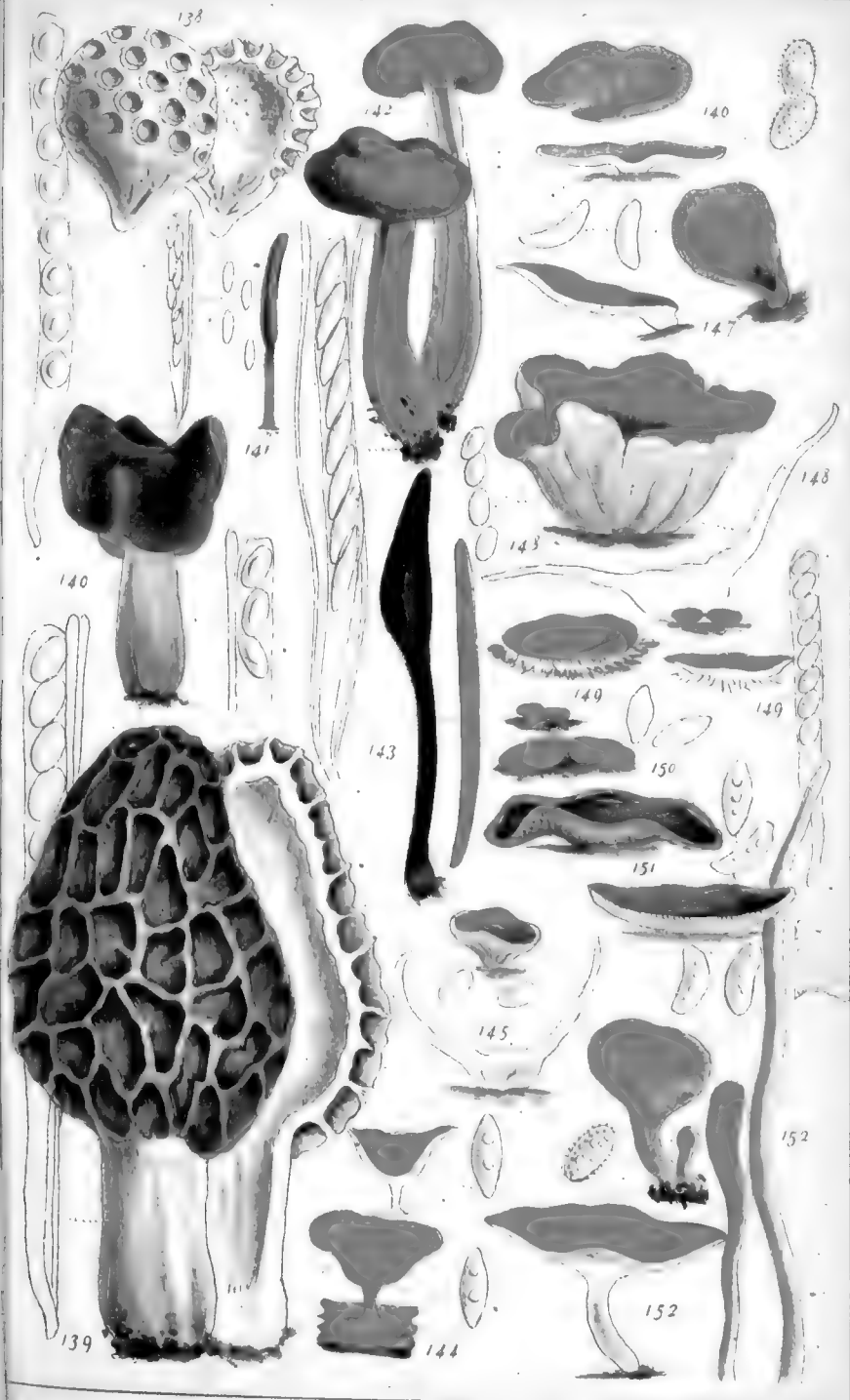




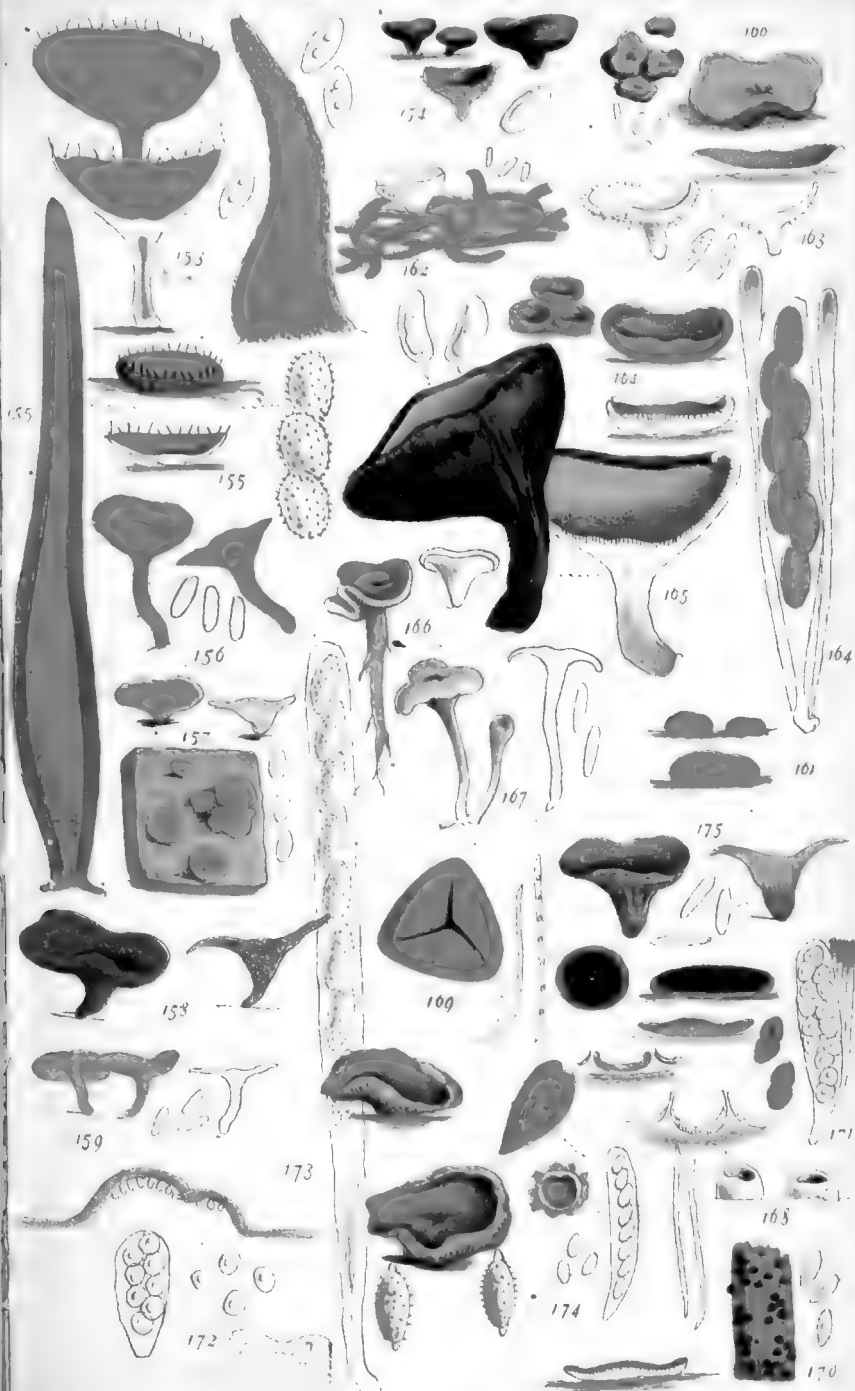




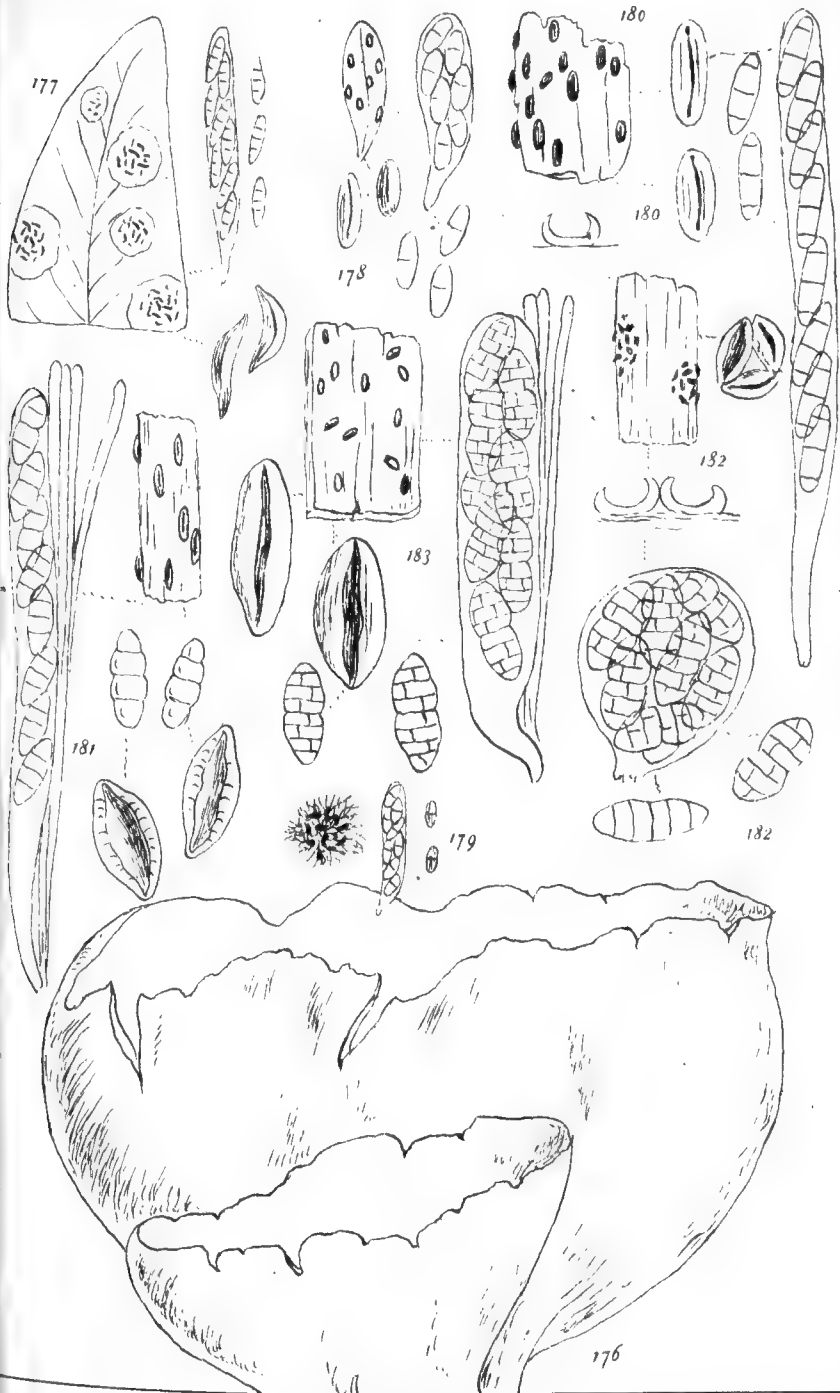






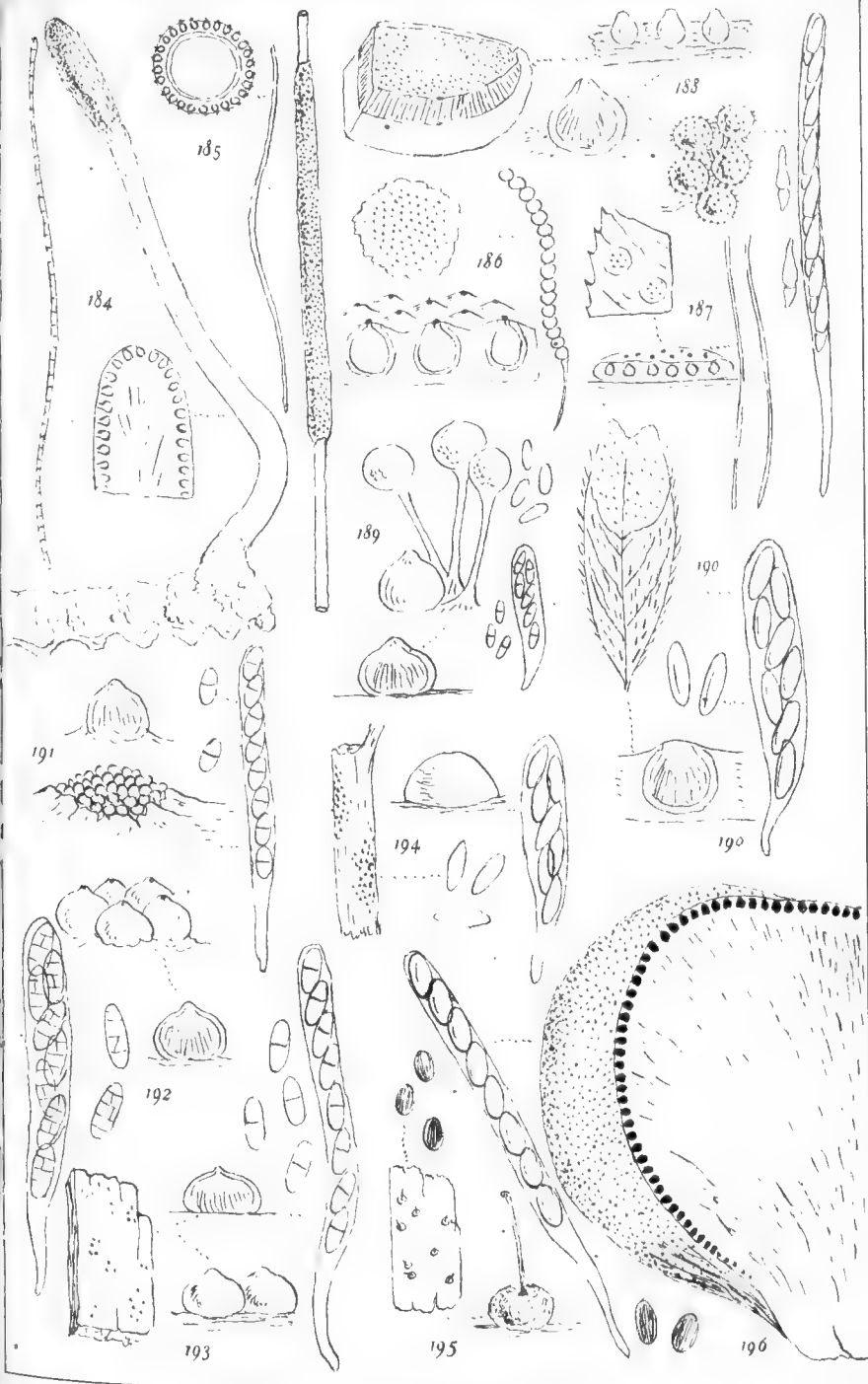




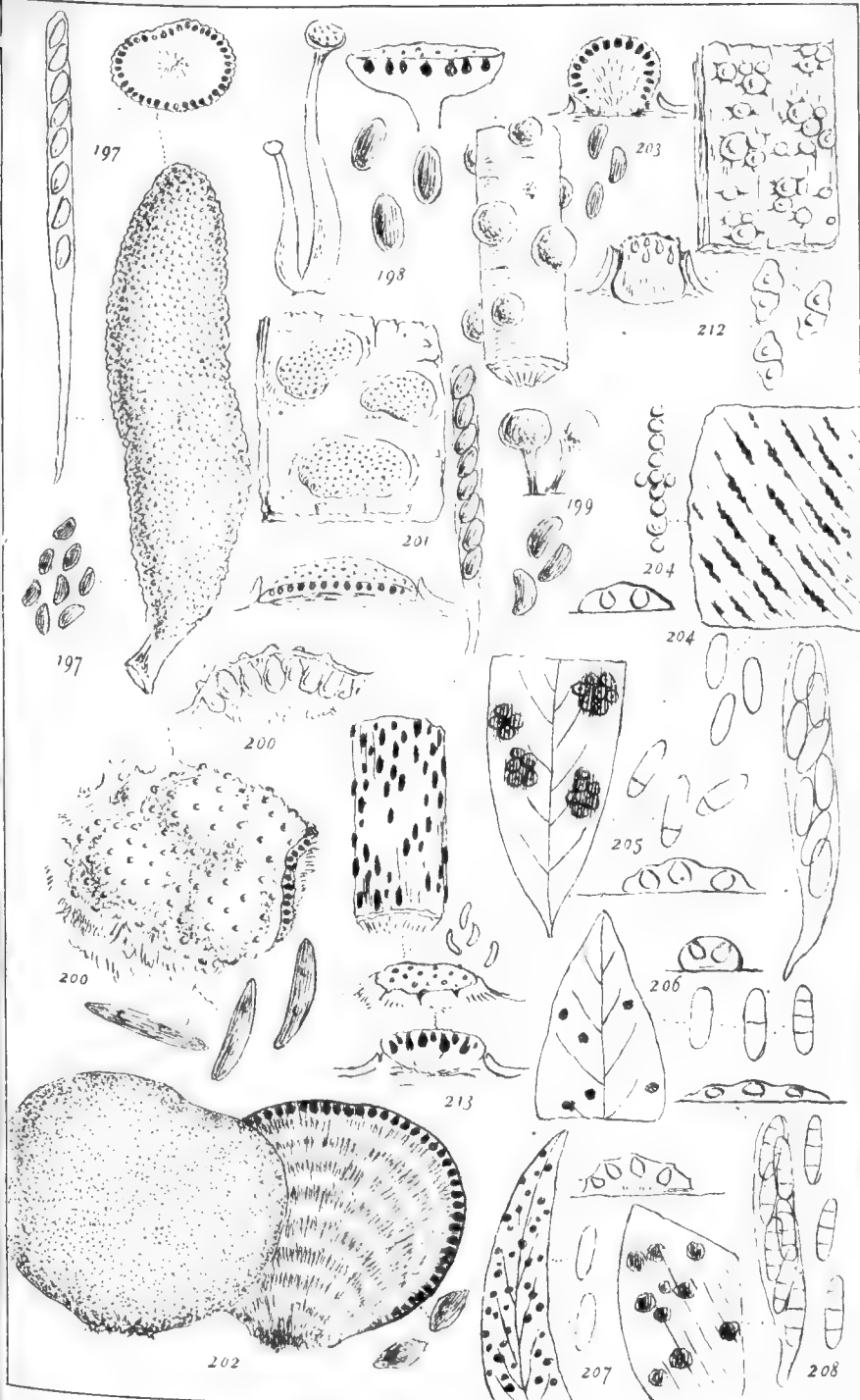




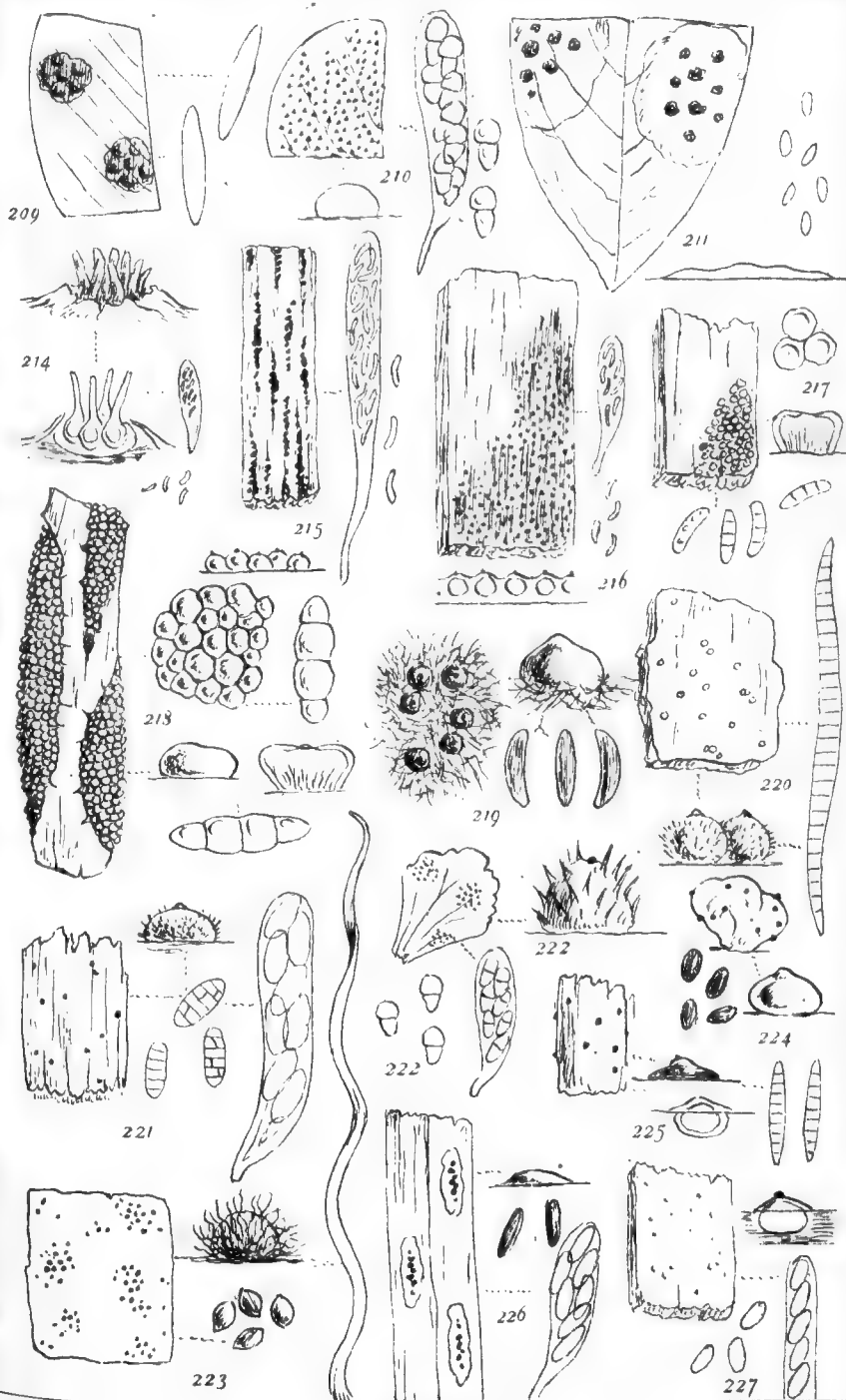




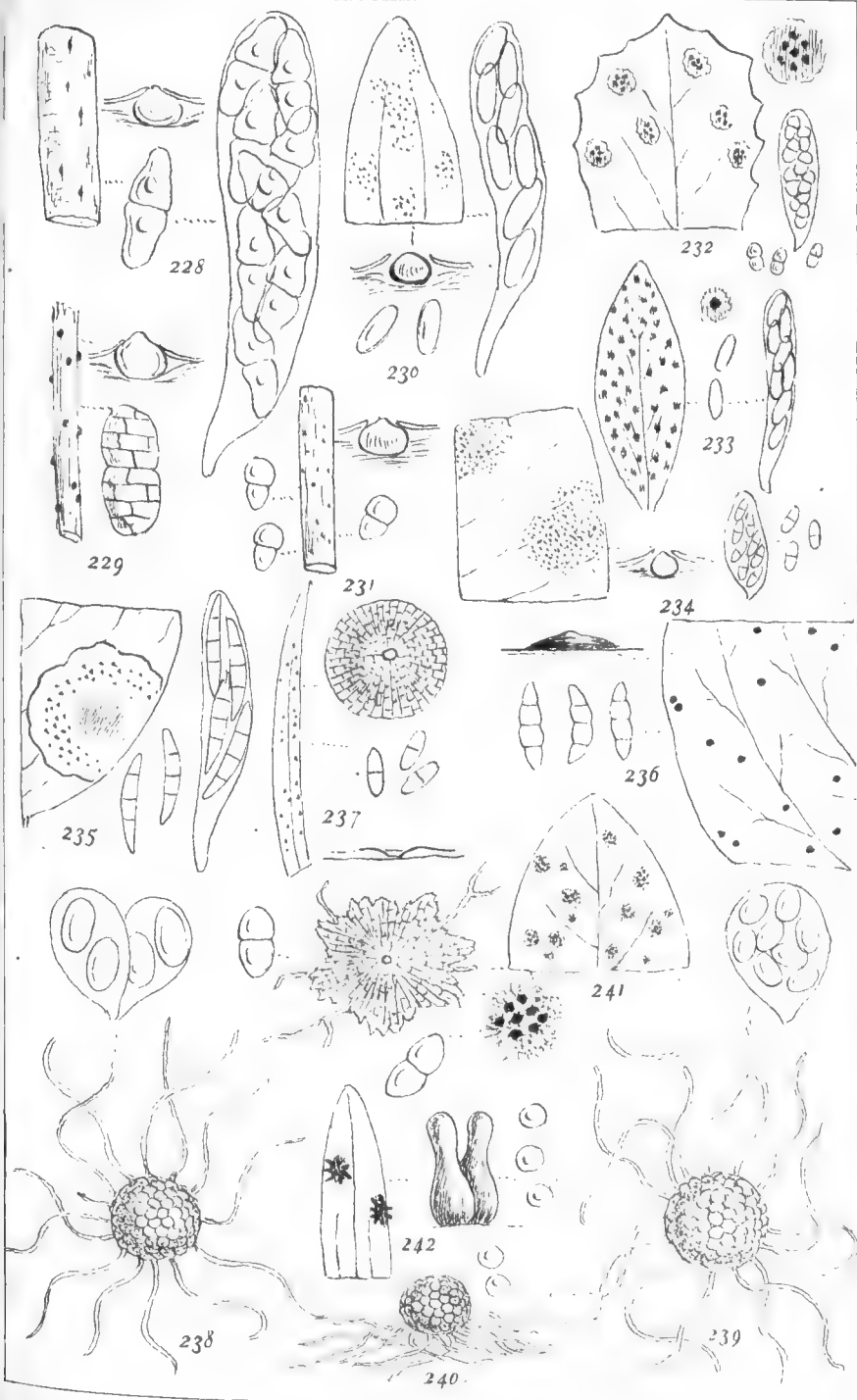






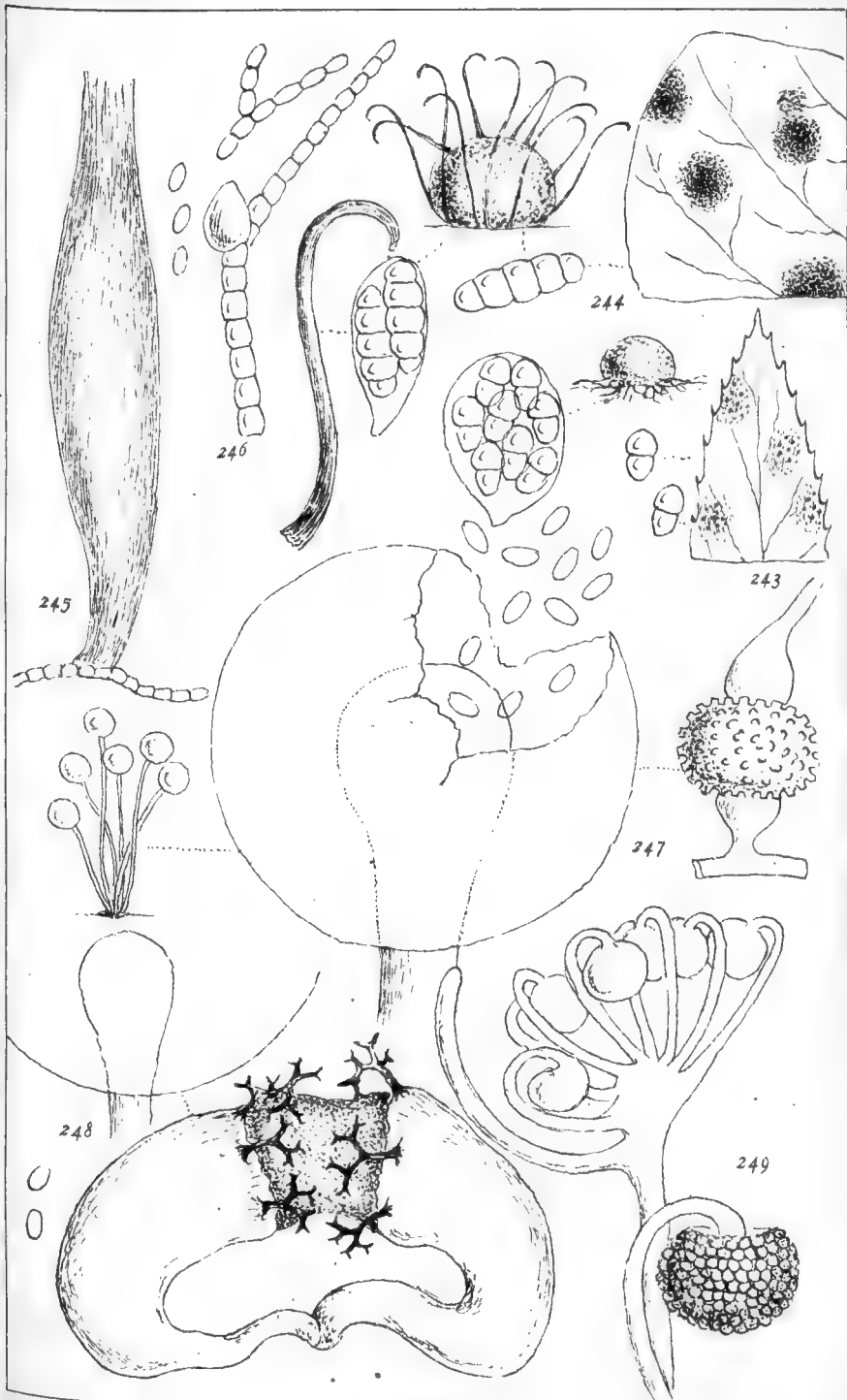




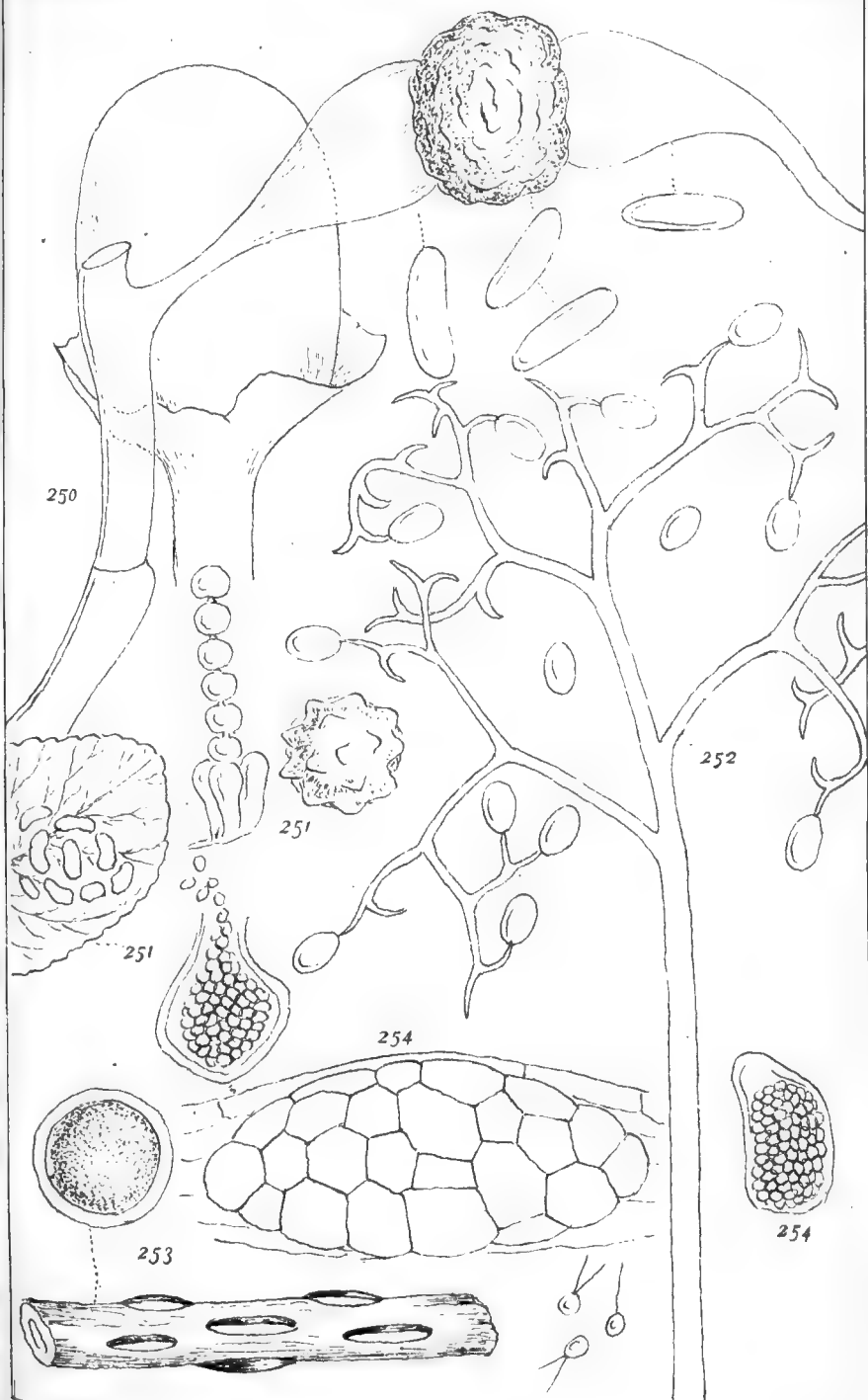




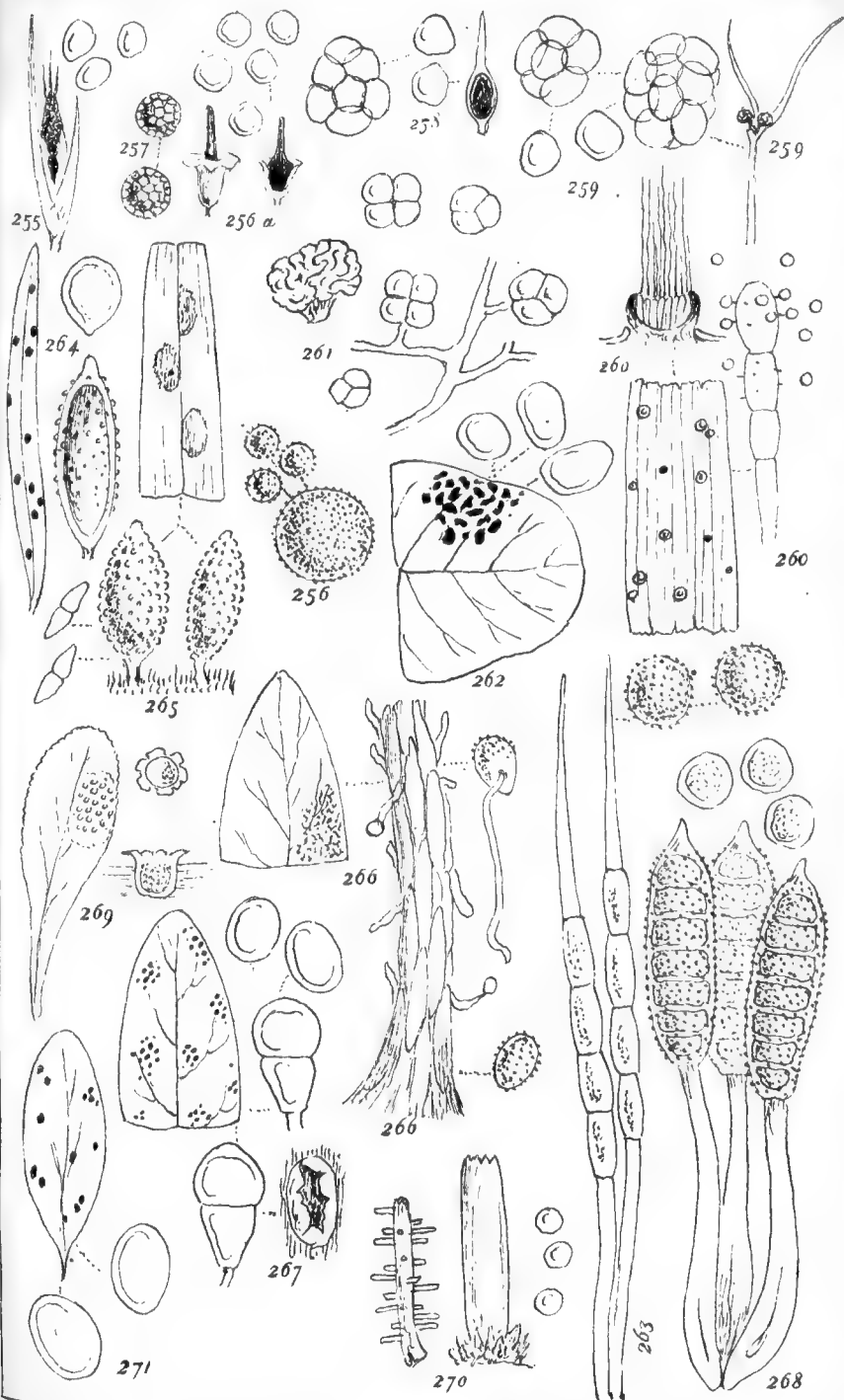




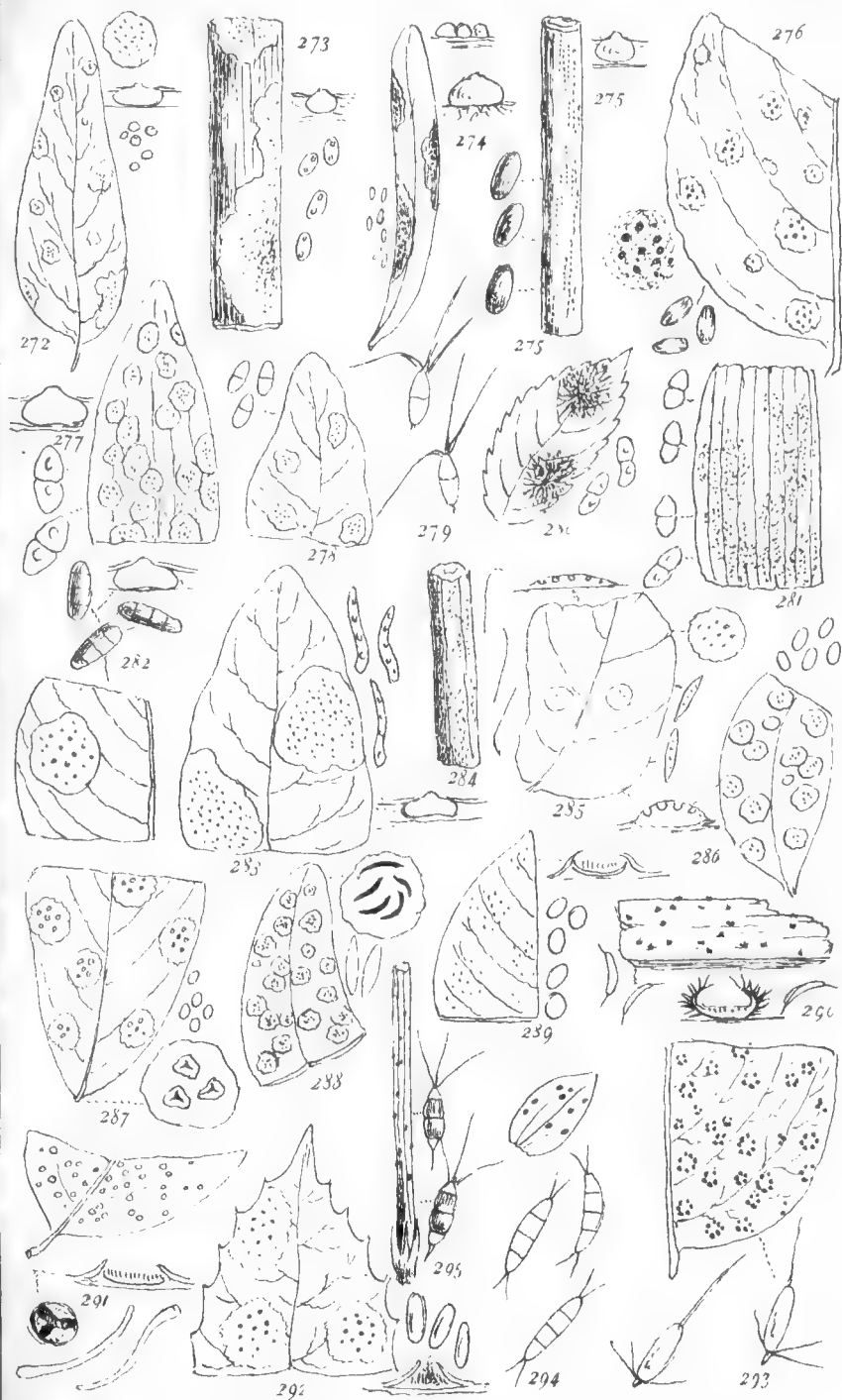






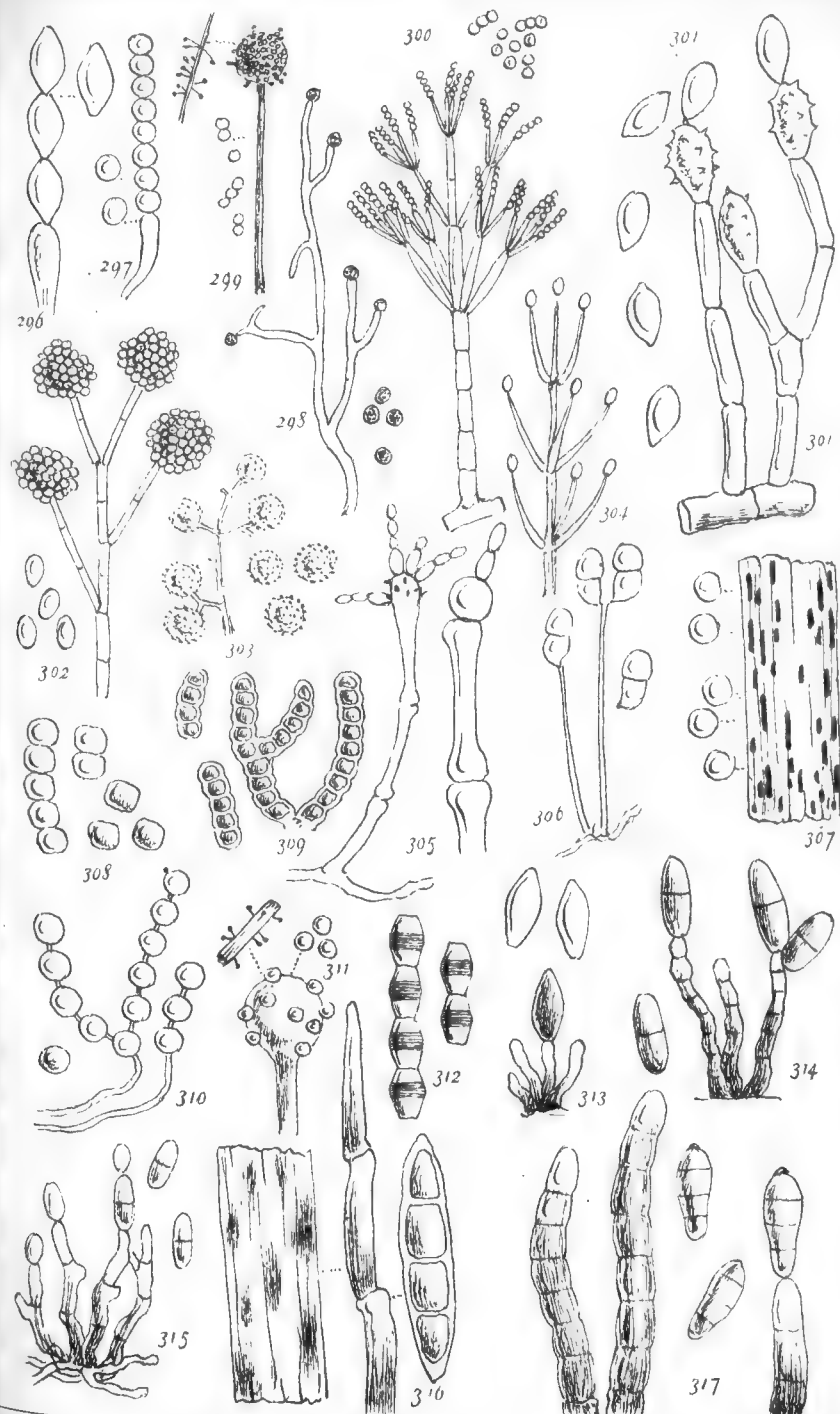




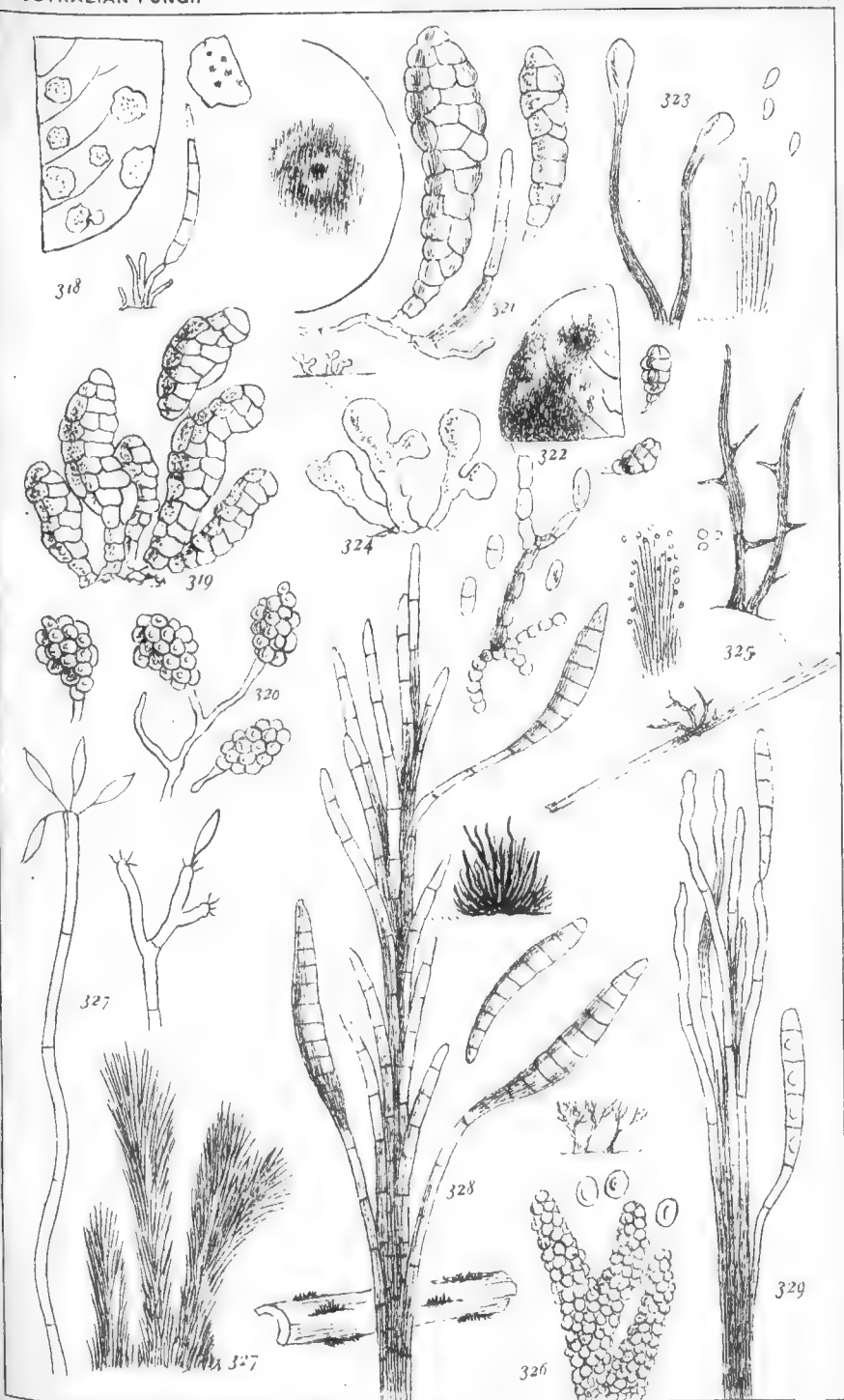




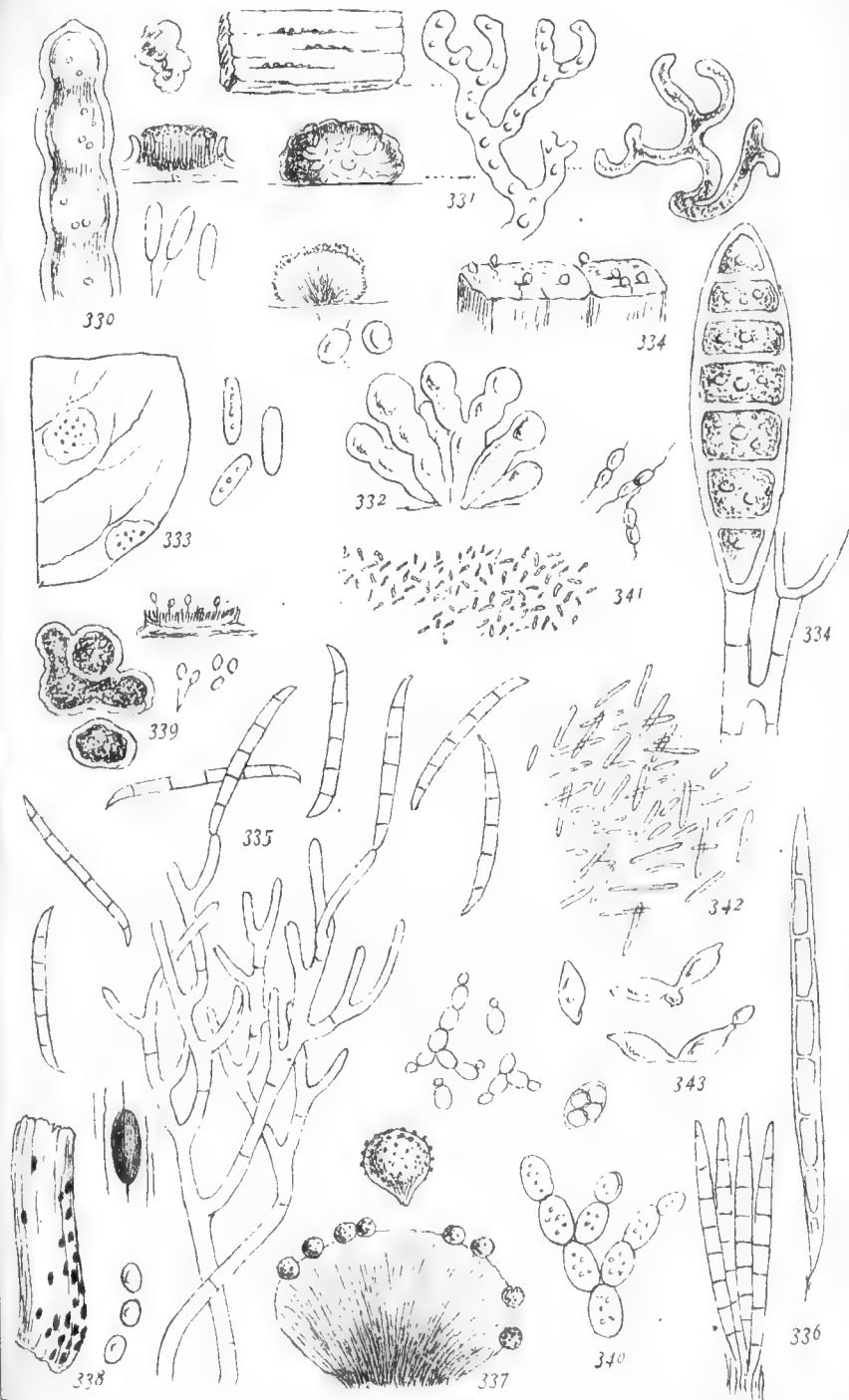




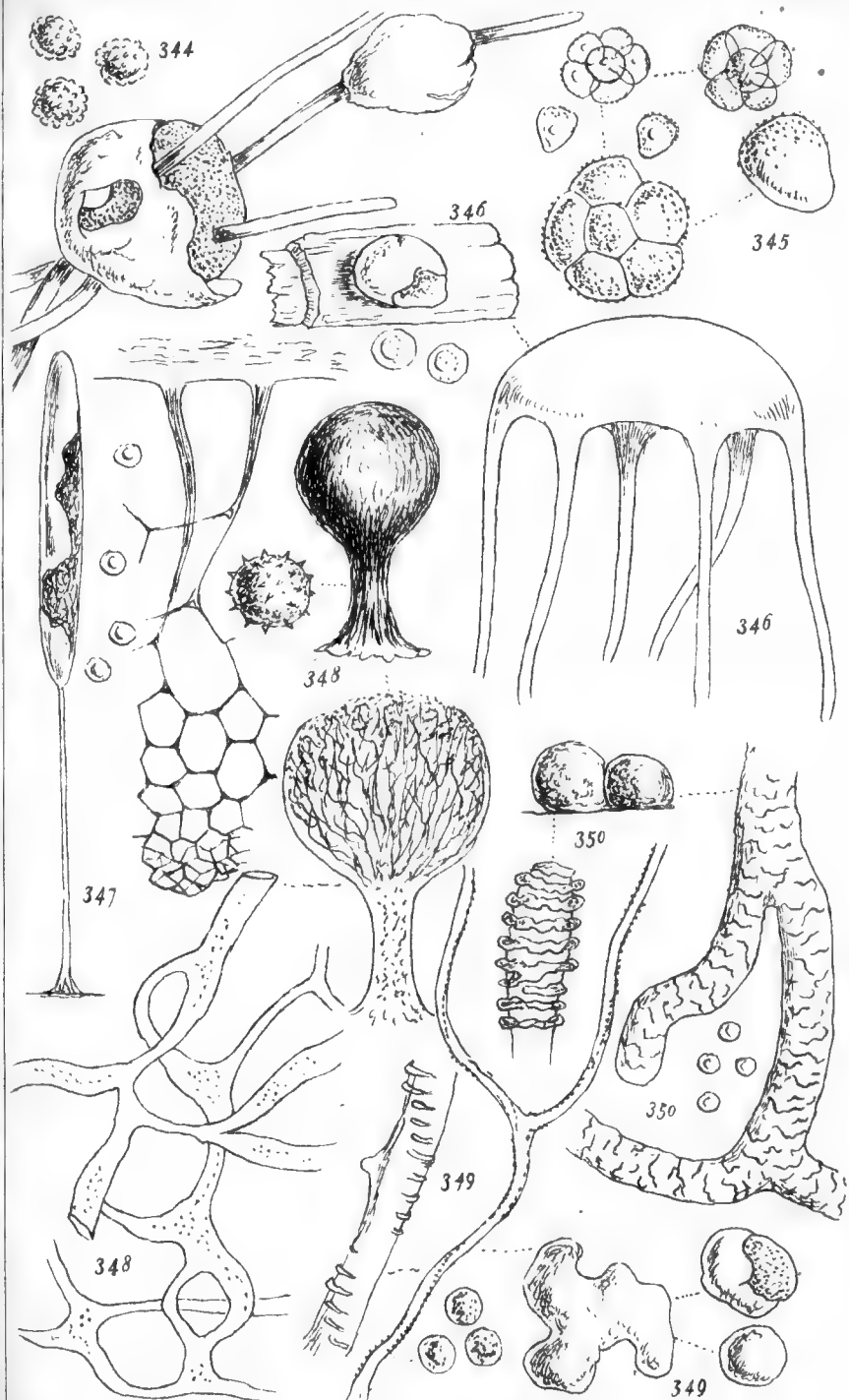








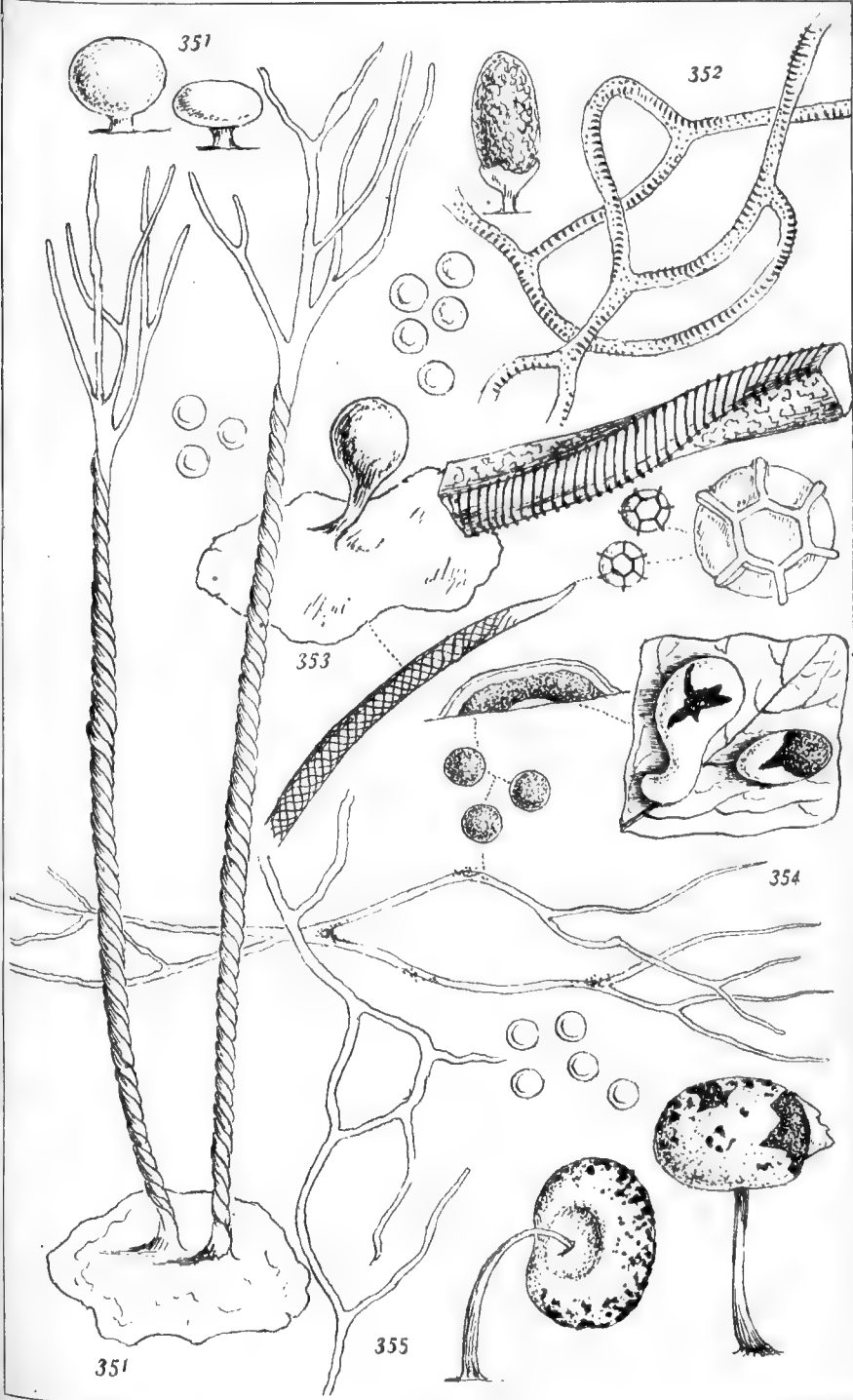




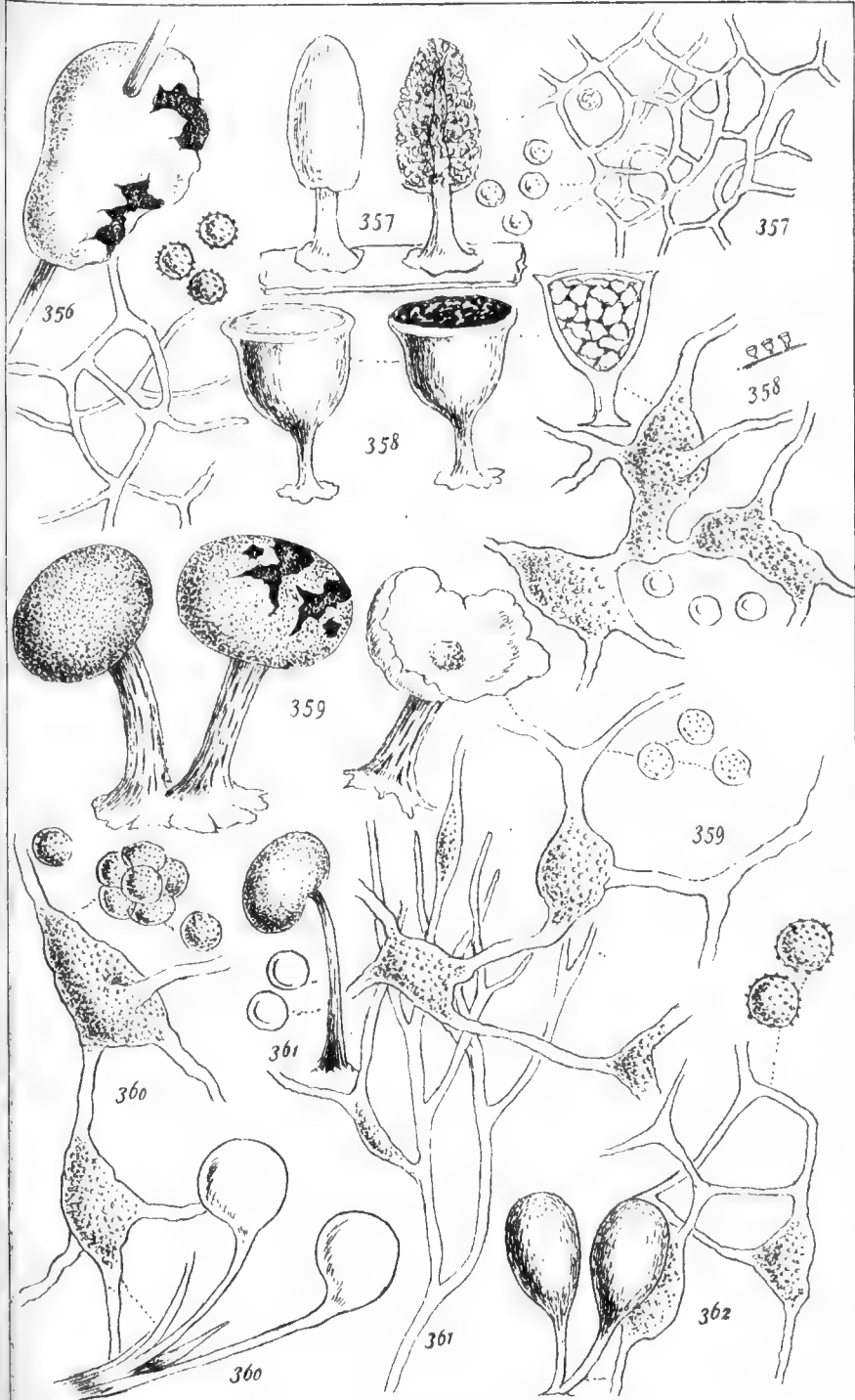
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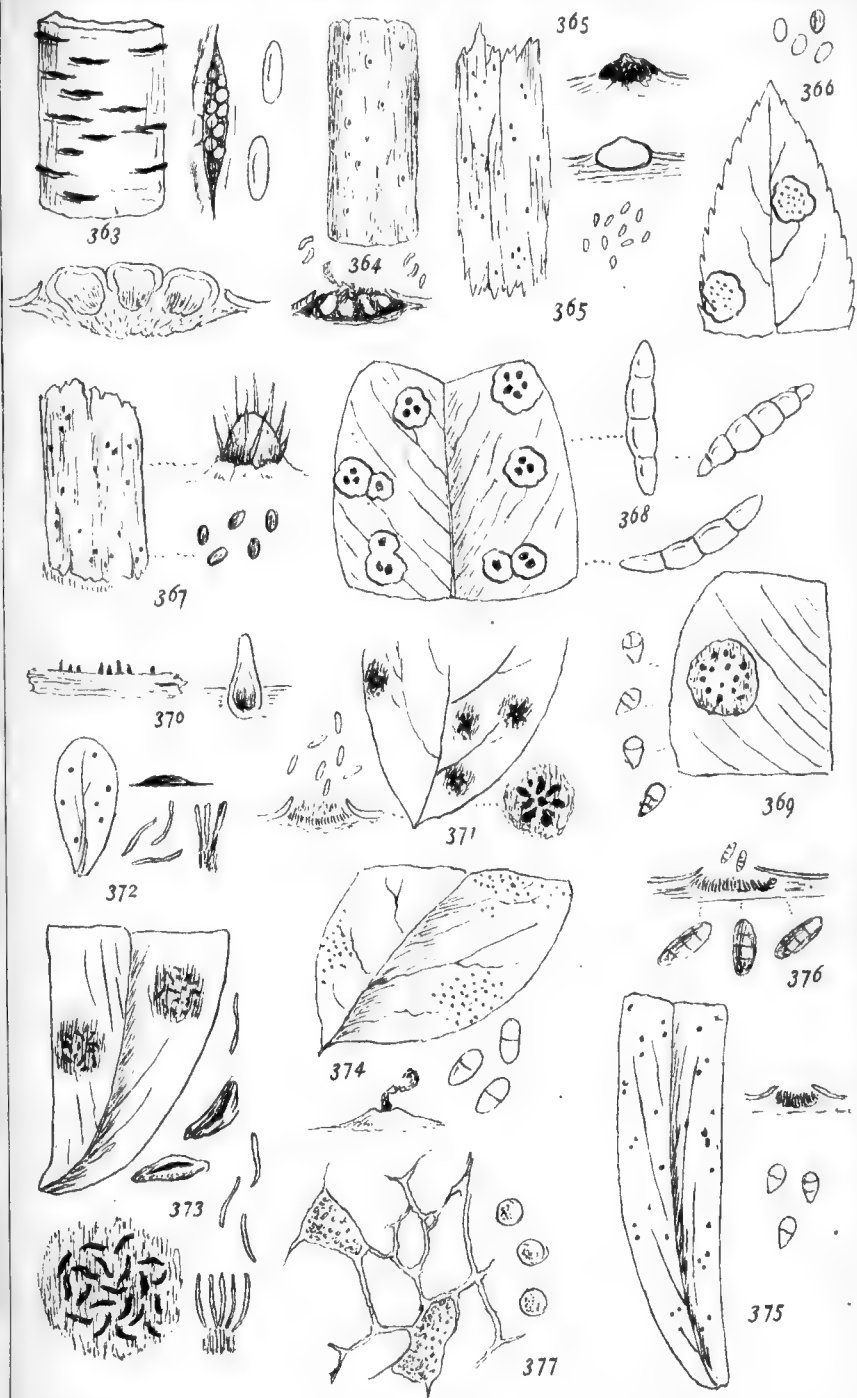














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